

The Most Mac Products Reviewed Anywhere

AUGUST 1996

Macworld

THE MACINTOSH® AUTHORITY

3D Breakthrough

**QuickDraw 3D
Pushes Your Software
to the Next Step
in Realism, Page 92**

Also in This Issue

**Best Mac
Web Sites**
An Expert Guide
to the Web's Hottest
Mac Resources,
Page 112

\$4.95 CANADA \$5.95



0 70989 37772 1

08>

Internet Explorer for the Macintosh.

Unlock the power of the Internet with this awesome browser. Small, fast, and designed for the Mac, Internet Explorer supports a rich multimedia experience and is easy to set up and use. The excitement of the World Wide Web awaits you.

Internet Assistant for Microsoft Excel & Internet Assistant for Microsoft Word.

Set up shop on the Internet or just publish a personal web page with tools you already know how to use. These additions to Microsoft Excel 5.0 and Word 6.0 easily turn your documents into HTML with just a few clicks.

Everything to gain.

Word 6.0.1a Update If you are still running Word 6.0 you will definitely want to upgrade your software to this much improved version. Word 6.0.1a, introduced last fall, enhances performance and stability, speeds up your boot time and word counts, improves font handling and much, much more.

System 7.5 Update 2.0 from Apple Computer.

Now you can get the most from your Mac with Apple's free update for System 7.5 users. This update will improve overall stability and performance and, if you use Virtual Memory on your PowerMac, start your applications up to four times faster than before.

Now you can download Microsoft's Internet Tools and discover the new Internet capabilities of your Mac. Free.* Microsoft's continued commitment to the Mac means you'll be browsing, creating, and accomplishing more than ever before. To obtain your Internet Tools, and

**Nothing
to lose.
{THEY'RE ALL FREE.}**

the System 7.5 Update 2.0, please visit [//www.microsoft.com/macoffice/](http://www.microsoft.com/macoffice/). Or to order a free Microsoft Empowerment Pack for the Mac, which includes a CD-ROM with the software listed above plus a special offer on RAM from Kingston, Technology call 800-469-6520 Dept. MCA.

Microsoft

WHERE DO YOU WANT TO GO TODAY?™

*Connect time charges may apply.

© 1996 Microsoft Corporation. All rights reserved. Microsoft and *Where do you want to go today?* are registered trademarks of Microsoft Corporation. Macintosh is a registered trademark and Mac and PowerMac are trademarks of Apple Computer, Inc.

AT SOME POINT, PEOPLE ARE COMPARING US



POWER COMPUTING POWERCENTER™ 120

POWERPC 604 PROCESSOR

120MHZ

1 GB HARD DRIVE

4X CD-ROM DRIVE

24 MB RAM

512K LEVEL 2 CACHE

15" SONY 15SF TRINITRON MONITOR

ACCELERATED ONBOARD VIDEO

GLOBAL VILLAGE 28.8 PLATINUM MODEM

EXTENDED KEYBOARD & MOUSE

MICROSOFT OFFICE 4.2.1

APPLE INTERNET CONNECTION KIT

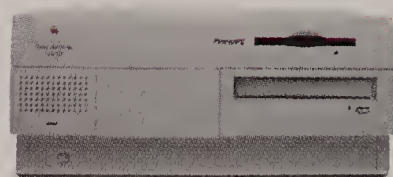
NETSCAPE NAVIGATOR AND CLARIS EMAILER LITE

\$1,200 IN ADDITIONAL BUNDLED SOFTWARE

PERSONAL CONFIGURATIONS

30 DAY MONEY BACK GUARANTEE

\$2895



APPLE POWERMAC™ 7600

POWERPC 604 PROCESSOR

120MHZ

1 GB HARD DRIVE

4X CD-ROM DRIVE

16 MB RAM

256K LEVEL 2 CACHE

\$2995

Probably
About Here

ARE GOING TO STOP D APPLE.

MORE AND MORE MAC™ USERS ARE TURNING TO POWER COMPUTING CORPORATION FOR MAC OS COMPATIBLES AND HERE'S WHY:

Power Computing's award-winning Mac OS systems are not only better and faster than their Apple counterparts, but choosing Power Computing is actually a smarter choice. Why? For the first time in history, you can actually customize the Mac OS system you want - to meet the specs you need - all direct from

the manufacturer. And at radically affordable prices. That means you can get a state-of-the-art PowerPC™ 604 PowerCenter system instead of an underpowered Performa™. So give us a call and let us help you configure the exact system of your dreams - and find out why everyone is raving about Power Computing.

**"POWER COMPUTING HAS FIELDIED SOME KILLER MACHINES.
APPLE WILL BE HARD PRESSED TO CATCH-UP."**

— MacUSER MAGAZINE JULY, 1996

**"THEY MIGHT AS WELL HAVE COME FROM APPLE -
THE PERFORMANCE AND COMPATIBILITY ARE THAT GOOD."**

— MacWORLD MAGAZINE



PowerComputing

Configure it any way you want it.

PowerTower™ 180 Starter 180MHz PowerPC 604 Processor

- 16 MB RAM (256 MB Max)
- 2 GB 7200 RPM AV Hard Drive
- Quad-Speed (4x) CD-ROM Drive
- 512K Level 2 Cache
- 2 MB VRAM On-Board (4 MB Max)
- 3 PCI Expansion Slots
- Connectix Speed Doubler
- Mini-tower Enclosure
- Extended Keyboard and Mouse
- \$1,200 in Bundled Software
- Add Macromedia Bundle \$795
- Add Sony 20" Trinitron 20SFII \$2099

\$4195

PowerCenter 150 Starter 150MHz PowerPC 604 Processor

- 16 MB RAM (256 MB Max)
- 1 GB Hard Drive
- Quad-Speed (4x) CD-ROM Drive
- 512K Level 2 Cache
- 1 MB VRAM On-Board (4 MB Max)
- 3 PCI Expansion Slots
- Desktop Enclosure
- Extended Keyboard and Mouse
- \$1,200 in Bundled Software
- Add Macromedia Bundle \$795
- Add Internal Iomega Zip Drive \$159
- Add Sony 15" Trinitron 15SX \$499

\$2995

PowerCenter 132 Starter 132MHz PowerPC 604 Processor

- 16 MB RAM (256 MB Max)
- 1 GB Hard Drive
- Quad-Speed (4x) CD-ROM Drive
- 512K Level 2 Cache
- 1 MB VRAM On-Board (4 MB Max)
- 3 PCI Expansion Slots
- Desktop Enclosure
- Extended Keyboard and Mouse
- \$1,200 in Bundled Software
- Add 28.8 Modem & Internet Kit \$195
- Add Internal Iomega Zip Drive \$159
- Add Sony 15" Trinitron 15SX \$499

\$2495



- PowerCenter 120 Starter**
120MHz PowerPC 604 Processor
- 8 MB RAM (256 MB Max)
 - 850 MB Hard Drive
 - Quad-Speed (4x) CD-ROM Drive
 - 512K Level 2 Cache
 - 1 MB VRAM On-Board (4 MB Max)
 - 3 PCI Expansion Slots
 - Low-Profile Enclosure
 - Extended Keyboard and Mouse
 - \$1,200 in Bundled Software

\$1,895

SERVICE & SUPPORT

- 30 day money back Guarantee
- Toll-free lifetime technical support
- 1, 2, or 3-year on-site service available, starting at \$49.

ORDER DIRECT
800-410-7693

<http://www.powercc.com>

2555 North IH 35, Round Rock, TX 78664-2015

Tel. 512/388-6868 Fax. 512/388-6799

Internet: info@powercc.com

Apple, Macintosh and Mac are registered trademarks, and the MacOS logo is a trademark of Apple Computer, Inc. PowerTower and PowerCenter are registered trademarks of Power Computing Corporation. All other brand and/or product names are the property of their respective holders. Prices and specifications are valid in the U.S. only and are subject to change without notice.

Circle 161 on reader service card

Macworld

THE MACINTOSH® AUTHORITY AUGUST 1996

Features

92 The Mac's 3-D Edge



BY JIM HEID *Macworld* Lab puts QuickDraw 3D through its paces to discover whether Apple's promising new 3-D technology has hit its stride.

100 Multimedia Options Multiply

BY JIM HEID *Macworld* highlights ten multimedia authoring programs and picks the best packages for a variety of interactive projects.

112 The Best Mac Web Sites

BY HOWARD BALDWIN *Macworld's* pick of the top Mac-oriented Web sites around, plus advice on how to find even more.

News

38 The CAD Shake-Up

With AutoCAD gone, who will lead the CAD market?

39 Adobe's Internet Strategy

New products and technologies meant to take Adobe—and users—to the next level in publishing.

Sneak Peek

44 Tomorrow's Applications Today

Hands on with CorelDraw 6.0
• QuarkImmedia • Netscape Navigator Gold 3.0

49 New Products



Adobe's World Wide Web strategy, in News, page 39.

Opinion

19 Letters

27 State of the Mac

BY ADRIAN MELLO Apple takes aim at the Internet.

33 The Desktop Critic

BY DAVID POGUE Product names gone wild.

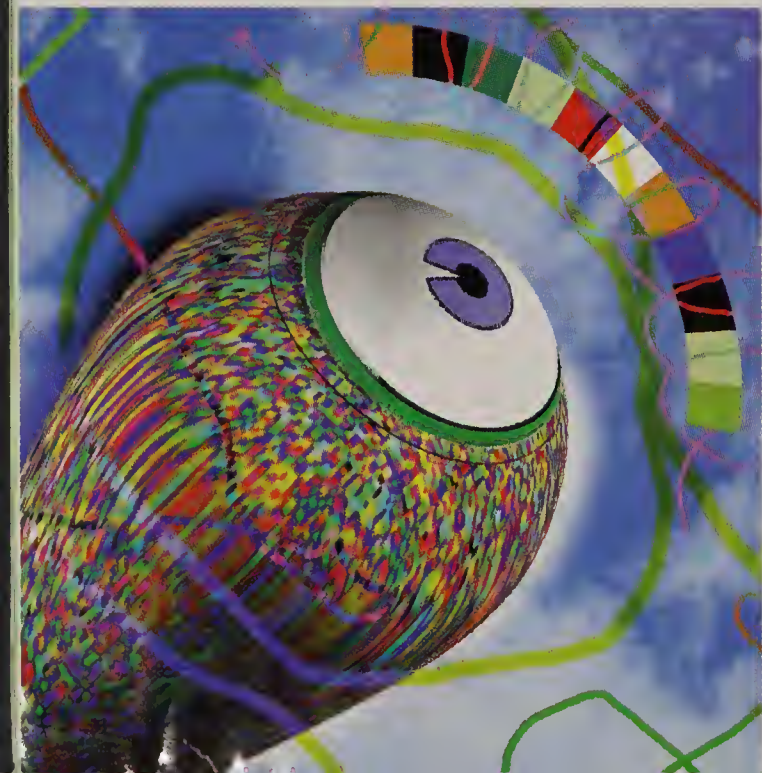
244 Viewpoint

BY SPIKE GILLESPIE Tales of an E-mail-order bride.

Our resident multimedia guru's guide to the best in today's multimedia packages, page 100.



A sub-\$500 Internet-surfing remote control from Oracle, in News, page 46.





A run to the client side
in Media, page 135.



Call it an armadillo, not a mouse—this thing
shrinks to fit. News, page 40.

Secrets

119 Clip and Save (Time, Keystrokes . . .)

BY JOSEPH SCHORR Novelty or clever System feature? Drag-and-drop clipping files.

125 Quick Tips

BY LON POOLE Tips, tricks, and shortcuts.

131 NetSmart

BY MATTHEW HAWN Constructing personal Web pages.

Media

135 Server-Friendly Image Maps

BY JIM HEID Take a load off your Web server with client-side maps.

138 Publishing Workshop

BY DAVID BLATNER How to *really* use indents.

140 Graphics Workshop

BY CATHY ABES Designing graphics with the WWW in mind.



August 1996, Volume 13, Number 8 Macworld (ISSN 0741-8647) is published monthly by Macworld Communications, Inc. Editorial and business offices: 501 Second St., San Francisco, CA 94107, 415/243-0505. Subscription orders and inquiries should be directed to 800/288-6848 or 303/604-1465. Subscription rates are \$30 for 12 issues, \$60 for 24 issues, and \$90 for 36 issues. Foreign orders must be prepaid in U.S. funds with additional postage. Add \$18 per year for postage for Canada and Mexico subscribers. Add \$69 per year for postage to all other countries. Periodicals postage paid at San Francisco, California, and at additional mailing offices. Postmaster: Send address changes to Macworld, P.O. Box 54529, Boulder, CO 80322-4529. Printed in the U.S.A.

Buyers' Tools

143 Tape-Backup Systems

BY DAN LITTMAN Macworld Lab burns through 17 tape systems to find the best in high-capacity backup.

147 Consumer Advocate

BY GEOFF DUNCAN Choosing a Mac-savvy Internet service provider.

151 Star Ratings

Macworld's ratings for hundreds of hardware and software products at a glance.

14 How to Contact Macworld



Got gigs to go before you sleep? Back up with the latest tape drives, compared and rated in Buyers' Tools, page 143.

ON THE COVER

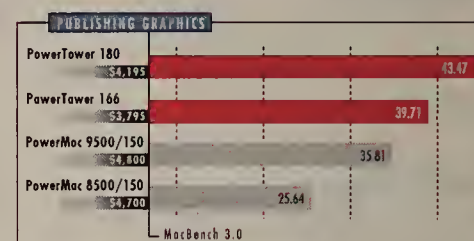
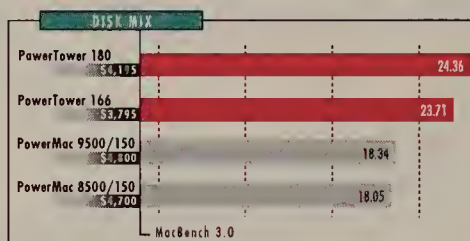
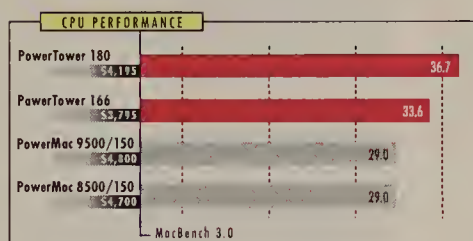
Illustration by Javier Roca

Reviews

- 52 ★★★★★/7.8 Polaroid PDC-2000 Digital camera
- 54 ★★★★★/7.3 Nupowr for PowerBook 500 Series;
★★★★/7.6 PowerBook 500 PowerPC Upgrade
PowerBook 500-series PowerPC upgrades compared
- 55 ★★★★★/6.9 Cumulus 2.5;
★★/3.7 Tropix 2.0
Image databases compared
- 56 ★★★★★/5.3 UniQorn 1.01
Page-layout application
- 59 ★★★★★/6.4 Now Utilities 6.0
System-enhancing utilities collection
- 59 ★★★★★/7.7 Bryce 2
Photo-realistic 3-D landscape tool
- 60 ★★★★★/6.9 Peak 1.02
Audio editing and processing
- 62 ★★★★★/5.3 Adobe File Utilities 1.0
Document utilities for Macs and PCs
- 63 ★★★★★/7.0 In Control 4.0;
★★★★/7.1 WebArranger 2.0
Internet-savvy personal information managers compared
- 65 ★★★★★/7.2 TeleFinder 5.0
Net-aware bulletin board software
- 67 ★★★★★/7.7 LabView 4.0
Lab instrumentation and data-acquisition software
- 69 ★★★★★/5.1 NewsHopper 1.2
Usenet news reader
- 71 ★★★★★/6.4 PowerBuilder 4.0 for Macintosh
Client/server development tool
- 73 ★★/4.0 WorldWrite 3.0
Word processor
- 75 ★★★★★/5.3 A Little Kidmusic;
★★/4.1 Juilliard Music Adventure
Music education software compared
- 76 ★★★★★/5.2 LanCD 3.2
Cross-platform network access software
- 78 ★★★★★/7.0 MessagePad 130
Personal digital assistant
- 80 ★★★★★/8.1 WillMaker 6.0
Easy-to-understand legal guide to writing wills
- 82 ★★★★★/6.8 Bartlett's Familiar Quotations
CD-ROM reference guide
- 83 ★★★★★/6.9 Dramatica Writer's Dream Kit 1.7
Fiction-writing assistant
- 84 ★★★★★/7.1 College Advisor
Web-based college search guide
- 86 ★★★★★/8.3 Final Effects AP
Video effects plug-ins for Adobe Premiere
- 88 ★★★★★/6.9 KPT Cool Effects
Photoshop and Photo Deluxe filter collection
- 88 ★★★★★/7.2 Connections
Adventure and puzzle game

INTRODUCING THE FASTEST MacOS SYSTEM EVER MADE.

POWERTOWER 604/180MHz
STARTING AT JUST \$4195



Power Computing has designed the world's fastest MacOS system - again. Based on the PowerPC 604 running at a blazing 180 or 166MHz, PowerTower is more than 20% faster and more than 20% less expensive than even the fastest Apple - the PowerMac 9500/150. Power Computing's new PowerTower is the highest-performing, most reliable Mac OS system available today for serious power users.

PowerTower 180AV System **NEW!**

180MHz PowerPC 604 Processor

- 32 MB RAM (256 MB Max)
- 2 GB 7200 RPM AV Hard Drive
- Iomega 1 GB Jaz Removable w/Cartridge
- Quad-Speed (4x) CD-ROM Drive
- 512K Level 2 Cache
- 2 MB VRAM On-Board (4 MB Max)
- Mira DC-20 Full Screen, Full Motion S-Video In/Out PCI Video Card w/Adobe Premiere LE
- Connectix Speed Doubler
- Mini-Tower Enclosure
- Extended Keyboard and Mouse
- \$1,200 in Bundled Software

\$5495



PowerTower 180 Hot Pick

180MHz PowerPC 604 Processor

- 32 MB RAM (256 MB Max)
- 2 GB 7200 RPM AV Hard Drive
- Quad-Speed (4x) CD-ROM Drive
- 512K Level 2 Cache
- IMS Twin Turbo 128M Graphics Accelerator with 4MB VRAM (128-bit)
- 2 MB VRAM On-Board (4 MB Max)
- 3 PCI Expansion Slots
- Connectix Speed Doubler
- Mini-Tower Enclosure
- Extended Keyboard and Mouse
- \$1,200 in Bundled Software

\$4995



PowerTower 166 Starter

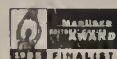
166MHz PowerPC 604 Processor

- 16 MB RAM (256 MB Max)
- 2 GB 7200 RPM AV Hard Drive
- Quad-Speed (4x) CD-ROM Drive
- 512K Level 2 Cache
- 2 MB VRAM On-Board (4 MB Max)
- 3 PCI Expansion Slots
- Connectix Speed Doubler
- Mini-Tower Enclosure
- Extended Keyboard and Mouse
- \$1,200 in Bundled Software
- Add Internal Iomega Zip Drive \$159
- Add Sony 17" Trinitron 17sfl \$979

\$3795

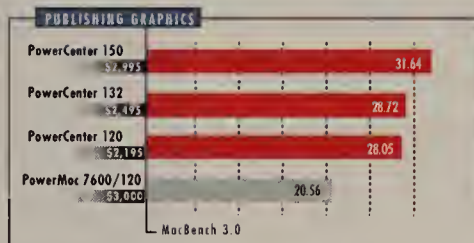
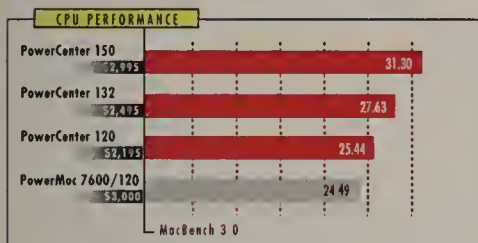


MORE THAN \$1200 OF FREE SOFTWARE BUNDLED WITH EVERY POWERTOWER AND POWERCENTER SYSTEM INCLUDING: MacOS 7.5.3 • FWB Hard Disk Toolkit PE • FWB CD-ROM Toolkit • Claris Works • Grolier's Encyclopedia • Now Utilities • Now Contact • Now Up-to-Date • Nisus Writer • Intuit's Quicken SE • America Online • Compuserve • Launch CD • 250 Bitstream Fonts • US CD Atlas • World CD Atlas • The Animals CD-ROM • Connectix Speed Doubler (PowerTower only)



AND THE MOST AFFORDABLE 604 SYSTEM EVER SOLD.

POWERCENTER 604/120MHz **STARTING AT JUST \$1895**



Don't even think about PowerPC 601 systems. Now for the first time, PowerPC 604 Mac OS systems are available to everyone - all at a price starting well below \$2,000. PowerCenter features the 604 PowerPC running at 150, 132 and 120MHz delivering the performance and value demanded by the small-office, home-office, enterprise and graphics user.

Configure it any way you want it.

PowerCenter 150 Starter 150MHz PowerPC 604 Processor

- 16 MB RAM (256 MB Max)
- 1 GB Hard Drive
- Quad-Speed (4x) CD-ROM Drive
- 512K Level 2 Cache
- 1 MB VRAM On-Board (4 MB Max)
- 3 PCI Expansion Slots
- Desktop Enclosure
- Extended Keyboard and Mouse
- \$1,200 in Bundled Software
- Add Macromedia Bundle \$795
- Add Internal Iomega Zip Drive \$159
- Add Sony 15" Trinitron 15sx \$499

\$2995



PowerCenter 132 Starter 132MHz PowerPC 604 Processor

- 16 MB RAM (256 MB Max)
- 1 GB Hard Drive
- Quad-Speed (4x) CD-ROM Drive
- 512K Level 2 Cache
- 1 MB VRAM On-Board (4 MB Max)
- 3 PCI Expansion Slots
- Desktop Enclosure
- Extended Keyboard and Mouse
- \$1,200 in Bundled Software
- Add 28.8 Modem & Internet Kit \$195
- Add Internal Iomega Zip Drive \$159
- Add Sony 15" Trinitron 15sx \$499

\$2495



- PowerCenter 120 Starter
120MHz PowerPC 604 Processor
- 8 MB RAM (256 MB Max)
 - 850 MB Hard Drive
 - Quad-Speed (4x) CD-ROM Drive
 - 512K Level 2 Cache
 - 1 MB VRAM On-Board (4 MB Max)
 - 3 PCI Expansion Slots
 - Low-Profile Enclosure
 - Extended Keyboard and Mouse
 - \$1,200 in bundled software

\$1895

SERVICE & SUPPORT

- 30 day money back Guarantee
- Toll-free lifetime technical support
- 1, 2, or 3-year on-site service available, starting at \$49.

NEW OPTIONS FOR ALL POWER SYSTEMS:

- **6X CD-ROM FOR JUST \$100 MORE.**
- **IOMEGA 100MB ZIP JUST \$159 MORE.**
- **NEW! FULL SCREEN PRO AV VIDEO**
- **NEW RAID SOLUTIONS**

ORDER DIRECT
800-405-7693

<http://www.powercc.com>

2555 North IH 35, Round Rock, TX 78664-2015

Tel. 512/388-6868 Fax. 512/388-6799

Internet: info@powercc.com



PowerComputing

Apple, Macintosh and Mac are registered trademarks, and the Mac OS logo is a trademark of Apple Computer, Inc. PowerTower and PowerCenter are registered trademarks of Power Computing Corporation. All other brand and/or product names are the property of their respective holders. Prices and specifications are valid in the U.S. only and are subject to change without notice.

Circle 151 on reader service card

New! Now accelerated for Power Mac and much more!

MasterJuggler Pro 2.0

Take Control of Your Fonts!™

Throwing every font into the System folder slows down you and your Mac. You have to put up with long font menus, slow application launching, and a bloated System folder. Your Mac can only handle 128 font suitcases so if you have a large font library, you're forced to quit all your open applications and drag fonts in and out of your System folder. Get a grip on your fonts. Restore speed, convenience and control with **MasterJuggler Pro**.

MasterJuggler Pro upgrades your Mac's font handling capabilities. It gives you access to your entire font library and you can store your fonts anywhere. You can even share fonts over a network. Font sets allow you to group fonts by client, job, project or any other category. You can open and close fonts, or sets of fonts, on the fly as you need them without quitting all your open applications. **Drag and drop** support lets you open and close fonts from the desktop. Using just the fonts you need makes your font menus shorter and your applications start noticeably faster.

Complete Font Management

MasterJuggler is the professional's choice and was picked as the preferred font manager by Macworld (5/95), MacUser (8/95) and Adobe Magazine (3/95). In addition to basic font management it also **checks your fonts for corruption** as they're opened so they'll never crash your Mac again. It **checks for missing printer fonts** to avoid the "jaggies." **Font number conflicts are automatically resolved** so the right font is always displayed. **"Font gathering"** copies the screen and printer fonts you need to send to a service bureau. Advanced font and sound compression saves valuable disk space. And you can print samples of your fonts in their typeface to create a type reference book.

Reliability & Compatibility That's Unmatched

MasterJuggler has the reputation for solid performance on all Macs including the PCI Macs. The new MasterJuggler Pro gives you the benefit of **Power Mac native** technology and is fully compatible with all Macs, all major desktop publishing and graphics software, and all font formats including QuickDraw GX.

Grab a copy today and take control of your fonts!

©1996
Alsoft, Inc.
PO Box 927,
Spring, Texas
77383-0927 USA.
713-353-4090 or
fax 713-353-9868.
MasterJuggler is a
registered trademark
of Alsoft, Inc. Other
product names are trademarks
of their respective companies.



THE UTILITY COMPANY
ALSOFT



800-257-6381

Circle 140 on reader service card

Macworld

PRESIDENT/PUBLISHER	Colin Crawford
ASSISTANT TO THE PRESIDENT	Sharon Sanderson
CHIEF OPERATING OFFICER	Stephen Daniels
BUSINESS MANAGER	Lisa Buckingham
FINANCIAL ANALYST	Eos de Feminis
DIRECTOR OF HUMAN RESOURCES	Shelly Ginenthal
EMPLOYEE RELATIONS MANAGER	Marisa Chow
NETWORK MANAGER	Walter J. Clegg
IS TECHNICIANS	Dave Johnson, Theodore Kim
PROGRAMMER/ANALYST	Frederic Desbois
ADMINISTRATIVE ASSISTANT	Ginger Von Wening
ACCOUNTING/OPERATIONS	Pat Murphy
ACCOUNTING/FACILITIES MANAGER	Michelle Reyes

Macworld, published by Macworld Communications, Inc., a wholly owned subsidiary of International Data Group, publishes 27 local-language editions of Macworld around the world. Macworld also sponsors the Macworld Expo in 9 cities around the world and has interests in book and CD-ROM publishing, online services, and international research. Headquartered in Boston, International Data Group has annual revenues of more than \$1.4 billion and is ranked by Advertising Age as the world's largest media company in the computer category and 25th largest overall. IDG's publishing subsidiary, IDG Communications, publishes more than 270 newspapers and magazines in over 75 countries. Ninety million people read one or more International Data Group publications each month. IDG's trade book division, IDG Books Worldwide, is the fastest-growing computer book publisher with more than 300 titles and foreign translations in 28 languages. IDG's research subsidiary, International Data Corporation (IDC), is the leading market-research and -analysis firm covering the computer field. IDG's exposition-management subsidiaries run over 64 computer-related expositions and conferences in 22 countries. International Data Group's publications include: **ARGENTINA:** Anuario de Informatica, Computerworld Argentina, Infoworld, PC World Argentina; **AUSTRALIA:** Australian Macworld, auWorld, Client/Server Journal, Computer Living, Computerworld, Computerworld 100, Digital News, Network World, PC World, Publishing Essentials, Reseller, WebMaster; **AUSTRIA:** Computerwelt Österreich, Networks Austria, PC Tip; **BELARUS:** PC World Belarus; **BELGIUM:** Data News; **BRAZIL:** Anuario de Informatica, Computerworld Brazil, Connections, Super Game Power, Macworld, PC World Brazil, Publish Brazil, Supergame; **BULGARIA:** Computerworld Bulgaria, Networkworld/Bulgaria, PC & MacWorld Bulgaria; **CANADA:** CIO Canada, Client/Server World, ComputerWorld Canada, InfoCanada, Network World Canada; **CHILE:** Computerworld Chile, PC World Chile; **COLOMBIA:** Computerworld Colombia, PC World Colombia; **COSTA RICA:** PC World Costa Rica/Nicaragua; **THE CZECH AND SLOVAK REPUBLICS:** Computerworld Czechoslovakia, Elektronika Czechoslovakia, PC World Czechoslovakia; **DENMARK:** Communications World, Computerworld Denmark, Macworld Denmark, PC Privat Denmark, PC World Denmark, PC World Denmark Supplements, TECH World; **DOMINICAN REPUBLIC:** PC World Republica Dominicana, **ECUADOR:** PC World Ecuador; **EGYPT:** Computerworld Middle East, PC World Middle East; **EL SALVADOR:** PC World Centro America; **FINLAND:** MikroPC, Tietoverkko, Tietoviikko; **FRANCE:** Distributique, Golden, Hebdo-Distributique, Info PC, Le Guide du Monde Informatique, Le Monde Informatique, Reseaux & Telecoms; **GERMANY:** Computer Partner, Computerwoche, Computerwoche Extra, Computerwoche Focus, Electronic Entertainment, GamePro, I/M Information Management, Macwelt, PC Welt; **GREECE:** GamePro, Multimedia World; **GUATEMALA:** PC World Centro America; **HONDURAS:** PC World Centro America; **HONG KONG:** Computerworld Hong Kong, PCWorld Hong Kong, Publish in Asia; **HUNGARY:** ABCD CD-ROM, Computerworld Szamitastechnika, PC & Mac World Hungary, PC-X Magazine; **ICELAND:** Tolvheimur/PC World Island; **INDIA:** Computerworld India, PC World India, Publish in Asia; **INDONESIA:** InfoKomputer PC World, Komputek Computerworld, Publish in Asia; **IRELAND:** ComputerScope, PC Live!; **ISRAEL:** People & Computers; **ITALY:** Computerworld Italia, Computerworld Italia Special Editions, Macworld Italia, Networking Italia, PC Shopping, PC World Italia, PC World/Walt Disney; **JAPAN:** Macworld Japan, Nikkei Personal Computing, SunWorld Japan, Windows World Japan; **KENYA:** East African Computer News; **KOREA:** Hi-Tech Information/Computerworld, Macworld Korea, PC World Korea; **MACEDONIA:** PC World Macedonia; **MALAYSIA:** Computerworld Malaysia, PC World Malaysia, Publish in Asia; **MEXICO:** Computerworld Mexico, Macworld, PC World Mexico; **MYANMAR:** PC World Myanmar; **NETHERLANDS:** Computable, Computerl Totaal, LAN Magazine, LanWorld Buyers Guide, Macworld, Net Magazine, Totaal Beurskrant; **NEW ZEALAND:** Absolute Beginner's Guide, Computer Buyer, Computer Industry Directory, Computerworld New Zealand, Electronic Entertainment, MTB, Network World, PC World New Zealand; **NICARAGUA:** PC World Costa Rica/Nicaragua; **NIGERIA:** PC World Nigeria; **NORWAY:** CAD/CAM World Norge, Computerworld Norge, Computerworld Privat (Datamagasinet), CW Rapport Norge, IDG's KURS-GUIDE, Macworld Norge, Multimedia World, PC World Ekspress, PC World Nettverk, PC World Norge, PC World's Produktguide; **PAKISTAN:** Computerworld Pakistan, PC World Pakistan; **PANAMA:** PC World Panama; **P. R. OF CHINA:** China Computer Users, China Computerworld, China Infoworld, Computer & Communication, Electronic Design China, Electronics Today, Electronics Weekly, Game Camp, PC World China, Popular Computer Weekly, Software Weekly, Software World, Telecom World; **PERU:** Computerworld Peru, PC World Profesional Peru, PC World Peru; **POLAND:** Computerworld Poland, Computerworld Special Report, Macworld, Network, PC World Komputer; **PHILIPPINES:** Computerworld Philippines, PC World Philippines, Publish in Asia; **PORTUGAL:** Cerebro/PC World, Computerworld/Correio Informatico, MacIn/PCIn; **Multimedia World Portugal;** **PUERTO RICO:** PC World Puerto Rico; **ROMANIA:** Computerworld Romania, PC World Romania, Telecom Romania; **RUSSIA:** Computerworld Russia, Mir PK, Sety; **SINGAPORE:** Computerworld Singapore, PC World Singapore, Publish in Asia; **SLOVENIA:** MONITOR, **SOUTH AFRICA:** Computing S.A., InfoWorld S.A.; **Network World S.A., Software World, Spain:** Computerworld Espana, Comunicaciones World, Dealer World, Macworld Espana, PC World Espana; **SWEDEN:** CAP&Design, Computer Sweden, Corporate Computing, MacWorld, Maxi Data, MikroDatorn, NNVerk & Kommunikation, PC/Aktiv, PC World, Windows World; **SWITZERLAND:** Computerworld Schweiz, Macworld Schweiz, Pctip; **TAIWAN:** Computerworld Taiwan; **Macworld Taiwan, PC World Taiwan, Publish Taiwan, Windows World, THAILAND:** Thai Computerworld, PC World Thailand, Publish in Asia; **TURKEY:** Computerworld Montir, Macworld Turkiye, PC Games, PC World Turkiye, Ukraine: Computerworld Kiev, Computers & Software, Multimedia World Ukraine, PC World Ukraine; **UNITED KINGDOM:** Acorn User, Amiga Action, Amiga Computing, Appletalk, CD-ROM Now, Computing, GamePro, Macaction, Macworld, Network News, Parents and Computers, PC Home, PSX Pro UK, The WEB; **UNITED STATES:** Cable in the Classroom, CD Review, CIO Magazine, Computerworld, Computerworld Client/Server Journal, Digital Video Magazine, DOS World, Electronic Entertainment, Federal Computer Week, GamePro, InfoWorld, I+Way, JavaWorld, Macworld, Maximize, Multimedia World, Netscape World, Network World, PC World, Publish, SunWorld Online, SWATPro Magazine, Video Event, WebMaster; **URUGUAY:** PC World Uruguay; **VENEZUELA:** Computerworld Venezuela, PC World Venezuela, and **VIETNAM:** PC World Vietnam

No other digital camera puts as much focus on the output.

Epson PhotoPC Digital Camera



"It blew the socks off everyone I showed it to."—Jason Shane, Technical Consultant, Coldwell Banker

"Epson's PhotoPC is just as impressive as it is inexpensive."—PC Magazine
(Reprinted from PC MAGAZINE, May 14, 1996. Copyright © 1996 PC MAGAZINE)

"The PhotoPC's quality is outstanding, even compared to digital cameras costing twice as much."—Jon Pepper, Family PC
(Reprinted from FAMILY PC, February 1996. Copyright © 1996 FAMILY PC)



\$499

ESTIMATED
SELLING
PRICE

- ❑ High-quality, 24 bit color images
- ❑ True 640x480 pixel resolution
- ❑ Epson's advanced ColorTrue™ System for more accurate and brilliant color pictures
- ❑ Store 32 standard or 16 high resolution pictures in base unit
- ❑ Expand storage up to 160 pictures with optional memory modules
- ❑ Store pictures for up to 1 year without battery power
- ❑ Accepts optional lenses and filters
- ❑ Easy to use PhotoPC software
 - Preview pictures taken
 - Transfer and delete pictures
 - Organize, edit and enhance pictures
- ❑ TWAIN compliant
- ❑ Pictures in standard JPEG format
 - No need to convert from proprietary format
 - Ready to use with Web pages
 - Smaller files for easy storage and faster downloads
- ❑ Built-in flash for low lighting conditions
- ❑ Auto shut-off to conserve power

PhotoPC

With the PhotoPC digital camera, capturing the image is just the beginning. Thanks to ColorTrue, Epson's advanced in-camera processing system, you can see the same brilliant images on paper that you see on-screen.

All you do is point, shoot and download images into your computer. With ColorTrue, and actual 640x480 pixel resolution, you'll get perfect output every time.

Whether at work, on the road, or at home, you can create electrifying newsletters, presentations, reports and e-mail.

Since the PhotoPC is Internet ready, it's the perfect tool for enhancing Web sites. Your images are stored as JPEG files, so you can put them right into a Web page without wasting time on conversion.

For more details, call 1-800-GO-EPSON. Ask for operator 3050. Or to experience PhotoPC image quality, visit our Web site (<http://www.epson.com>). Download a few brilliant images from our Digital Photo Gallery, and see the difference for yourself.



SEYBOLD EDITORS'
HOT PICKS
OF WORLDWIDE DIGITAL CAMERAS

YOU'VE GOT TO SEE IT IN **EPSON** COLOR.™

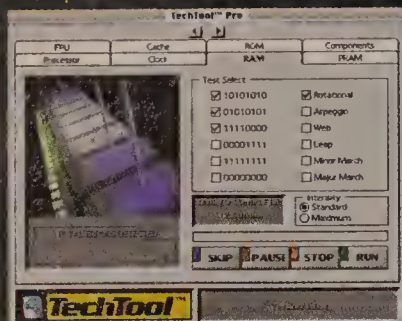
Epson is a registered trademark of Seiko Epson Corp. PhotoPC and ColorTrue are trademarks of Epson America, Inc. All other trademarks are the property of their respective owners. ©1996 Epson America, Inc.

STAPLES
The Office Superstore

COMPUSA
THE COMPUTER SUPERSTORE

COMPUTER **City**

TechTool Pro™



*"If there is anything wrong with my Mac,
TechTool Pro will find it."* Richard S. Thompson
Network Coordinator

System bombs, freezes, sad Macs, crashes, SCSI problems and indecipherable error codes. Computer users face these and other potential hazards all of the time. Sometimes the source of the problem is obvious, but most of the time it's not. That's why you need TechTool Pro, the new problem-solving utility from MicroMat Computer Systems. TechTool Pro goes beyond cryptic diagnostic programs by providing interactive help in finding the cause of the problem. And it doesn't just stop there! When TechTool Pro finds the problem, it will tell you (in plain English) how to eliminate the problem for good. In some cases it will even fix the problem for you.

If Macintosh troubles are bringing you down, get TechTool Pro. Because you've got better things to do with your time than waste it on a broken computer.

For more information by fax, call our fax-on-demand system at 707-838-4231 and order document #2009.



800-829-6227

or 707-837-8012

FAX: 707-837-0209

email: micromat@nbn.com

<http://micromat.com/mmcs/>

©1996 MicroMat Computer Systems All rights reserved. TechTool and the M-cubed logo are trademarks of MicroMat Computer Systems. Macintosh is a trademark of Apple Computer Inc.

MICROMAT
COMPUTER SYSTEMS

Circle 77 on reader service card

Macworld

EDITOR-IN-CHIEF

Adrian Mello

EDITORIAL

EXECUTIVE EDITORS

Galen Gruman, Carol Person

EDITORIAL PRODUCER

Barbara Assadi

DIRECTOR OF EDITORIAL OPERATIONS

Jane Lagas

SENIOR EDITOR/DEPARTMENTS

Marjorie Baer

SENIOR EDITOR/FEATURES

Charles Piller

SENIOR EDITOR

Howard Baldwin

SENIOR ASSOCIATE EDITOR/NEWS

Stephen Beale

SENIOR ASSOCIATE EDITOR

Anita Epler

ASSOCIATE EDITOR/REVIEWS

Wendy Sharp

ASSOCIATE EDITORS

Cathy E. Abes, Linda Comer,

Cameron Crotty, Elizabeth Dougherty, Katherine L. Ulrich

ASSISTANT EDITORS

Suzanne Courteau, Jim Feeley

OFFICE MANAGER

Deborah Weinberger

ADMINISTRATIVE ASSISTANT

Roxanne Gentile

ASSISTANT TO THE EDITOR-IN-CHIEF

Patricia Carberry-Harris

CONTRIBUTING EDITORS

Mel Beckman, Robert C. Eckhardt,

Erfert Fenton, Jim Heid, Steven Levy, Cary Lu,

Deke McClelland, Tom Negrino, David Pogue, Lon Poole,

Steve Roth, Joseph Schorr, Charles Seiter, Franklin N. Tessler

INTERNATIONAL EDITORS

Osmund Iversen, Australia;

Vinicius Souza, Brazil; Marianne Fajstrup, Denmark;

Michael Thevenet, France; Andreas Borchert, Germany;

Enrico Lotti, Italy; Osamu Honma, Japan;

Jessica Monreal, Mexico; Oscar Kneppers, Netherlands;

Toralv Ostvang, Norway; Alvaro Ibariez, Spain;

Lennart Hakansson, Sweden; Cuno Schneeberger, Switzerland;

Bahattin Apak, Turkey; Simon Jary, United Kingdom

LAB

LAB DIRECTOR

Lauren L. Black

SENIOR TECHNICAL ANALYSTS

Mark Hurlow, Jeff Sacilotto

TECHNICAL ANALYSTS

Matthew R. Clark, Chris Uiterwijk

INVENTORY CONTROLLER

Paul Brown

COPY EDIT AND EDITORIAL PRODUCTION

MANAGING EDITOR

Ruth Henrich

SENIOR COPY EDITOR

Paul-Michael King

SENIOR PRODUCTION EDITOR

Lisa Brazieal

COPY EDITORS

Gail E. Nelson, Elissa Rabellino

ASSISTANT PRODUCTION EDITOR

Jackie Goodman

ART AND DESIGN

ACTING DESIGN DIRECTOR

Leslie Barton

ART DIRECTOR

Joanne Hoffman

SENIOR DESIGNER/INFORMATIONAL GRAPHICS

Arne Hurty

ASSOCIATE ART DIRECTOR

Sylvia Benvenuti

ASSOCIATE DESIGNER

Tim Johnson

SENIOR DESIGN ASSOCIATES

Belinda Chlouber, Martha Katt

DESIGN ASSOCIATE

Rachel Arnold

ONLINE

ONLINE SALES MANAGER

Jeff Julian

ONLINE ACCOUNT MANAGER

Ed Ramirez

WEB ADMINISTRATOR

Chip Carman

ONLINE ADMINISTRATOR

Steve Costa

CONTENT ENGINEER

Paul Devine

ONLINE PRODUCER/EDITOR

Karen Liberatore

PRODUCTION ASSISTANT

Kristine Moss

You can drive it in your House
You can drive it with a Mouse
You can drive it in your Socks
You can drive it eating Lox
You can drive it Here or There
You can drive it Anywhere



The 1996 TOYOTA CD-ROM

Think of it as a portable showroom.
You provide the computer. It follows.
Every Toyota Car, Truck, SUV, RAV4 or Van.
Specifications. Dealer locations. It's got it.
Virtually explore the models in any color, from
any angle, inside and out. No hurry. No hassle. PC or Mac.®
For your free disc, just call 1-800-GO-TOYOTA, or order on-line at
<http://www.toyota.com/horn/media>. Go ahead — take it for a spin.



TOYOTA

I love what you do for me

©1996 Toyota Motor Sales, U.S.A., Inc.
Buckle Up! Do it for those who love you.

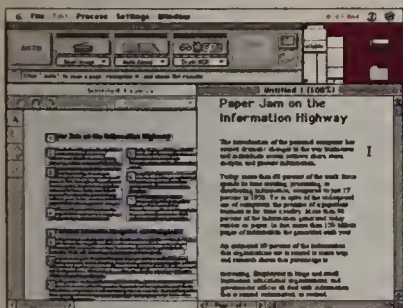
Circle 39 on reader service card

NEW
VERSION 6.0

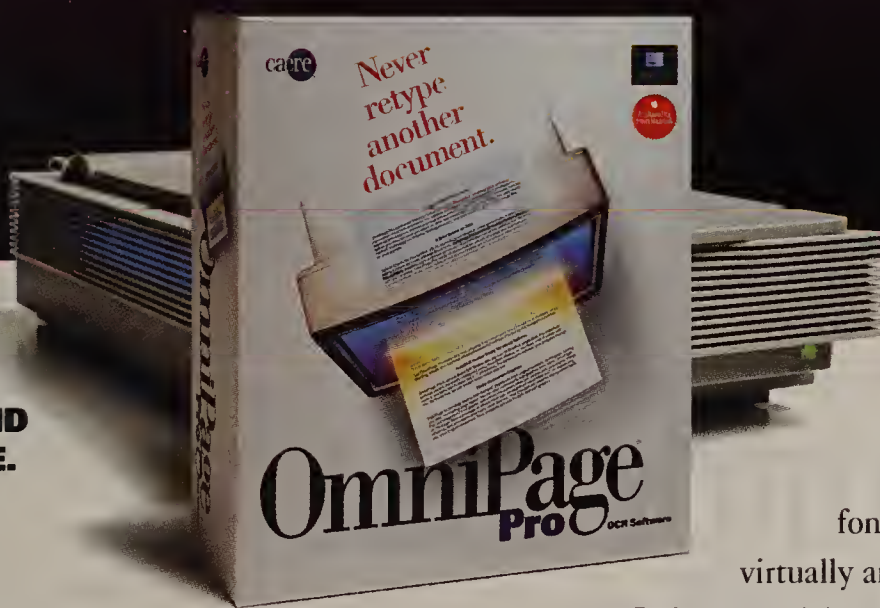
TURN YOUR SCANNER INTO A WORLD-CLASS TYPIST.

INTRODUCING OMNIPAGE PRO 6.0— IT'S FASTER, EASIER AND MUCH MORE ACCURATE.

Tired of retyping faxes, reports, articles, even letters into your Macintosh? With OmniPage® Pro 6.0 and your scanner, you can accurately enter thousands of words per minute with the simple push of a button.



OmniPage Pro 6.0 is ten times quicker than the fastest typist—and still delivers pinpoint accuracy.



OmniPage Pro 6.0's industry-leading Optical Character Recognition (OCR) software converts your scanned pages to editable text and graphics in seconds for use in popular Mac applications like Word, WordPerfect, Quark Xpress, Excel and many others. So you get to spend more time producing instead of manually typing.

And OmniPage Pro 6.0's blazing speed, which is even faster on Power Mac systems, is only outdone by its superior accuracy. It recognizes all

fonts at
virtually any size.

It flags suspicious words, then corrects them for you. It accurately interprets hard-to-read faxes and copies using grayscale information. And it

*"Powerful and faster,
Caere's OCR stalwart scores
high on accuracy."*

MacUser January 1995

even reads unique characters and special symbols.

Without doubt OmniPage Pro 6.0 is the smartest OCR software you can buy. So call and order a copy today or visit your local reseller.

SPECIAL UPGRADE

\$149*

70% OFF RETAIL PRICE

Upgrade from OmniPage Limited Edition, OmniPage Lite, WordScan or other versions of OmniPage (including those bundled in your scanner) and get the best OCR!

- 65% more accurate
- 35% faster
- Enhanced, easy-to-use AutoOCR Toolbar™
- Retain original page layout with True Page®
- 24-bit image editor
- Accelerated for Power Macintosh
- Interactive Apple Guide assistance

800-736-5735

Call Ext. 80 today!

COMPUSA

EGGHEAD
All you need to know.

COMPUTER CITY
SUPERSTORE

caere

*Suggested price US dollars—subject to change without notice. Offer valid in US and Canada only. Caere, the Caere logo, OmniPage, WordScan and True Page are registered trademarks and AutoOCR Toolbar is a trademark of Caere Corporation. All other names are the property of their respective holders. © 1995.

Circle 69 on reader service card

Now Shipping! Expansion Bay 230MB Magneto-Optical Drives from VST



VST Technologies' Expansion Bay Magneto-Optical Drive is the perfect portable backup solution for PowerBook 190 & 5300 users.

Each removable Magneto-Optical disk holds up to 230MB of data, providing virtually limitless storage and archiving space! Plug-N-Play simplicity.

- Hot swappable — no need to sleep, shutdown or restart
- Uses ISO standard 128MB and 230MB MO disks — compatible with desktop MO SCSI drives
- Disks offer unlimited read and rewrite — provides reliable, inexpensive archiving of your most valuable files
- Part # MOD5000 — \$449.95 MSRP

Also for PowerBook 190/5300

Charger & Internal Batteries

Expansion Bay Hard Drives



Charger 5000
PowerBook 190/5300 Internal Battery
Charger AC Bundle
Charger 5000 / Battery Bundle



540MB Hard Drive • 640MB Hard Drive
800MB Hard Drive • 810MB Hard Drive
1.2 GB Hard Drive

Come Visit VST
at Macworld Boston
August 7-10, 1996
BOOTH #1638
Bayside Expo Center

VST
TECHNOLOGIES

VST Technologies • 1620 Sudbury Road • Suite 3 Concord, MA 01742
(508) 287-4600 • (508) 287-4068 Fax • vstinc@aol.com

Circle 73 on reader service card

Macworld

DISPLAY ADVERTISING SALES

ASSOCIATE PUBLISHER	Matt Sweeney (415/978-3271)
NATIONAL SALES DIRECTOR	Steve Plevin (415/978-3138)
SALES DEPARTMENT COORDINATOR	Eva Bosch (415/974-7310)
SALES DEVELOPMENT DIRECTOR	Suzanne Saluti (415/975-2624)
SALES DEVELOPMENT COORDINATOR	Leslie Black (415/978-3160)
NATIONAL ACCOUNTS MANAGER	Lois Brennan (415/978-3262)
ACCOUNT EXECUTIVE	Liz Pabón (415/978-3257)
NATIONAL ACCOUNTS MANAGER	Karl Elken (415/978-3155)
ACCOUNT EXECUTIVE	Christine Wong (415/978-3192)
ADMINISTRATIVE ASSISTANT	Jessica Ross (415/267-1799)
NATIONAL ACCOUNTS MANAGER	Sara Culley (310/545-0646)
ADMINISTRATIVE ASSISTANT	Margaret Level Green (415/267-4577)
NATIONAL ACCOUNTS MANAGER	Cynthia Ramsey (201/243-1197)
NATIONAL ACCOUNTS MANAGER	Paul Bonarrigo (508/370-0832)
ACCOUNT EXECUTIVE	Lisa Weisberg (415/978-3164)
NATIONAL ACCOUNTS MANAGER	Lisa Ladle (800/779-5622)
ACCOUNT EXECUTIVE	Kathy Poppenhagen (847/827-4477)
ADMINISTRATIVE ASSISTANT	Kim Giovanni (847/827-4477)

MAIL ORDER/CLASSIFIED ADVERTISING SALES

MACWORLD SHOPPER	800/888-8622
	Niki Stranz (415/978-3105), Carol Johnstone (415/978-3152), Shannon Smith (415/974-7414)
ACCOUNT MANAGER/MW DIRECTORY AND WEBWATCH	Bethany Baller (415/978-3276)
ADMINISTRATIVE ASSISTANT	Toni May (415/975-2638)

MACWORLD GLOBAL PRODUCT SUPPORT CENTER

DIRECTOR OF MARKETING AND SUPPORT SERVICES	Kimberlee A. Luedee
MARKETING ASSOCIATE	Alisson Walsh

RESEARCH

RESEARCH DIRECTOR	Linda Lawrence
SENIOR RESEARCH ANALYST	Matt McAlister
RESEARCH ANALYST	Phillip Hibbert

MARKETING

MARKETING DIRECTOR	Cynthia Koral
MARCOM MANAGER	Rhona Hamilton
TRADE SHOW/EVENTS MANAGER	Anna Noetzel
MARKETING ASSOCIATE	Shannon McArdle

CIRCULATION

VICE PRESIDENT/DIRECTOR OF CIRCULATION	Angelina Beitia
SINGLE-COPY SALES DIRECTOR	George Clark
SENIOR CIRCULATION MANAGER	Lori Hitchcock
CIRCULATION MANAGER	Elizabeth Jensen
NEWSSTAND SALES MANAGER	Martin Garchar
DIRECT-MARKETING MANAGER	Kelvin Gee
NEWSSTAND COORDINATOR	Dalia Schwartz
SUBSCRIPTION COORDINATOR	Peter Ho
NEW BUSINESS COORDINATOR	Geoffrey Walls
SUBSCRIPTION INQUIRIES	800/288-6848

PRODUCTION

VICE PRESIDENT/DIRECTOR OF MANUFACTURING	Anne Foley
PRODUCTION MANAGER	Cynthia Neustadt
ASSISTANT PRODUCTION MANAGER	David W. McAferty
DTP COORDINATOR	Clayton Haberman
BILLING INFORMATION MANAGER	So Fong Yip
BILLING ASSISTANT	Lily Cheung

The Monitor that Shows You the Whole Kahuna.



9.4"x12.7"
active
display area,
15.9"
diagonal.

Portrait
Display Labs

The Pivot 1700™ has other 17" color monitors beat from top to bottom. It pivots from horizontal to vertical mode to give you the tallest, sharpest display you can get. Taller, even, than a 21" monitor! And much more affordable. So now you can read a full 8.5"x 11" page *without scrolling*.

Call us today or, if you prefer, e-mail us at pdcalif@aol.com for the whole story.



800-858-7744 Ext. 31

<http://www.portrait.com>

Circle 89 on reader service card

It Should Be a Crime to Sell Laser Printers Without **X•ACT**

Sentence all of them to the clink for concealment!

Guilty as charged: Withholding information about **X•ACT™** (XANTÉ's Accurate Calibration Technology). You see, they don't want you to know just how perfect your output can actually be —

X•ACT allows you to calibrate
the accuracy of your printer
like you've never seen before!

Exclusively implemented on all XANTÉ® products, X•ACT overcomes a limitation common to all laser printers. In other words, the measurements you input, you'll output — precisely. From camera-ready output to direct-to-plate, you'll get a new level of control unlike any other laser printer on the market. Now, can you imagine why anyone would buy a high resolution laser printer without X•ACT? We can't.

Here are just a few more exceptional product line features XANTÉ has under lock and key:

- True Adobe™ PostScript™ Level 2
- High Resolution from 600 x 600 to 1800 x 1800 dpi
- Enhanced Screening Technology
- Halftone Calibration Technology
- High Speed Controller
- Oversized Printing Format up to 12 x 25 Inches
- Simultaneous Interfacing
- Automatic Emulation Switching

We at XANTÉ are committed to giving you the absolute highest quality products with unconditional customer support and satisfaction.

Now would you buy a laser printer from a jailbird? We didn't think you would. Call XANTÉ today and we'll send you our complete product line brochure.

1-800-926-8839 ext. 2128

Dealers call ext. 2129 Fax 334-342-3345



Adobe PostScript

© XANTÉ Corporation. XANTÉ and Accel-a-Writer are registered trademarks of XANTÉ Corporation. X•ACT is a trademark of XANTÉ Corporation. Adobe, PostScript, and the PostScript logo are trademarks of Adobe Systems Incorporated or its subsidiaries and may be registered in certain jurisdictions. Other brands and product names are trademarks or registered trademarks of their respective holders.

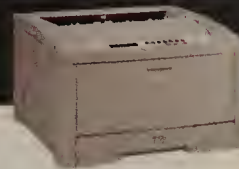
Optional on-site service provided by XANTÉ in partnership with Olivetti North America.
olivetti



MASTERCARD/VISA/AMEX/DISCOVER

Accel-a-Writer-8300

600 x 600 dpi (standard) & 1200 x 1200 dpi
Aggressively priced
Print up to 12 x 25 inches



PlateMaker-8200

600 x 600 (standard), 800 x 800 & 1200 x 1200 dpi
Print Myriad plates up to 19.38 inches
Print plain-paper output up to 12 x 25 inches



LaserPress-1800

1800 x 1800 dpi (standard)
1800 x 900 & 900 x 900 dpi (user selectable)
Print up to 12 x 19 inches



Accel-a-Writer-8200

600 x 600 (standard), 800 x 800 & 1200 x 1200 dpi
16 pages per minute (letter)
Print up to 12 x 25 inches



Accel-a-Writer-812

1200 x 1200 dpi (standard) 600 x 600 dpi (user selectable)
8 pages per minute (letter)
Print up to legal size



XANTÉ
Innovations In Output

Circle 112 on reader service card

HOW TO CONTACT MACWORLD

Subscription Questions

Phone Mainland USA 800/288-6848
All other locations 303/604-1465
Fax 303/604-7644
U.S. Mail Subscription Services
P.O. Box 54529, Boulder, CO 80322-4529
E-Mail subhelp.macworld@neodata.com

REPRINTS AND PERMISSIONS Address requests for reprint orders and for permissions to copy editorial for other purposes to Reprints and Permissions, Editorial Department.

Permission will be granted by the copyright owner for those registered with the Copyright Clearance Center (CCC) to photocopy any article herein—for personal or internal reference use only—for the flat fee of \$1.50 per copy of the article or any part thereof. Specify ISSN 0741-8647 and send payment directly to the CCC at 27 Congress St., Salem, MA 01970.

Back Issues of Macworld

Back issues are \$7 per issue for U.S. delivery (\$12 overseas); prepayment in U.S. funds is required. Make checks or money orders payable to Macworld Magazine and mail along with a written request to Macworld Back Issues, c/o Snyder Newell, P.O. Box 7046, San Francisco, CA 94120-9727. Readers can obtain newsstand premiums by mailing a check for \$2.95 (shipping and handling) to Macworld Communications, Newsstand Promotion, 501 Second St., San Francisco, CA 94107. Important: Please state CD title and issue, and include shipping name and address.

Macworld in Microfilm

Macworld is available on microfilm and microfiche from UMI, 300 N. Zeeb Rd., Ann Arbor, MI 48106-1346; 313/761-4700.

Macworld Editorial

Our offices are located at 501 Second St., San Francisco, CA 94107; 415/243-0505, fax 415/442-0766. Internet: macworld@macworld.com; 703/702.702@compuserve.com; macworld1@applelink.apple.com.

Readers can contact editors directly via the Macworld forum on America Online (keyword Macworld) or Macworld Online's Web site (<http://www.macworld.com>).

LETTERS TO THE EDITOR Direct all comments, questions, and suggestions regarding any aspect of the magazine to Letters to the Editor (letters@macworld.com). All mail is read by our editor. We reserve the right to edit all submissions; letters must include your name, address, and telephone number.

QUICK TIPS Send your questions or tips on how to use Mac computers, peripherals, or software to the attention of *Quick Tips*. Please include your name, address, and telephone number.

CONSUMER ADVOCATE Been burned? Ripped off? Direct your concerns (by mail only) to *Consumer Advocate*. Include your address and phone number as well as the address of the vendor. We also encourage you to include copies of correspondence exchanged with the vendor in question.

BUGS AND TURKEYS Send us descriptions of turkeys (flaws in conception or design) and bugs (defects or flaws in execution) with your telephone number, mailing address, and T-shirt size.

STREETWISE SHOPPER Vendors and resellers, fax requests to obtain an application for inclusion of special product promotions in *Streetwise Shopper*.

WRITING FOR MACWORLD If you're interested in writing for us, send a self-addressed, stamped envelope with a request for our writer's guidelines. Do not send unsolicited manuscripts.

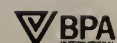
FOUNDER

David Bunnell

FOUNDING EDITOR

Andrew Fluegelman 1943-1985

Macworld is a publication of Macworld Communications, Inc. Macworld is an independent journal not affiliated with Apple Computer, Inc. Macworld, Macworld Interactive, Macworld Shopper, MW, MW Lab, MW Shopper, The Desktop Critic, Expert Graphics, Quick Tips, Star Ratings, Buyers' Tools, Streetwise Shopper, and Conspicuous Consumer are registered trademarks of International Data Group, Inc. Power PC World and Secrets are trademarks of IDG, Inc. APPLE, the APPLE LOGO, MAC, and MACINTOSH are registered trademarks, and MACLETTER and POWERBOOK are trademarks of Apple Computer, Inc. Printed in the United States of America. Copyright © 1996 Macworld Communications, Inc. All rights reserved. Macworld is a member of IDG Communications, the world's largest publisher of computer-related information.



Can't run Windows[®] 95 on his Mac!

PENTIUM
VERSION
AVAILABLE!



got OrangePC[®]?

When you must run **DOS[™]**, **Windows[®]**, **Windows[®] 95**, **Windows[®] NT** or **OS/2[®] WARP**, no one can take away your Mac as long as you "got OrangePC." Yes, unlike any other product on the market today, the OrangePC hardware card runs every major operating system on **all PCI and all NuBus Macs and PowerMacs**.

Our latest OrangePC Series 400 has an impressive list of features: the latest Apple[®] PCI technology; up to 120 Mhz 5x86 processor and 64 Mb on board; 16 bit Sound Blaster[™] in/out with game port; one parallel and two serial ports; up to 2 Mb RAM for accelerated SVGA video; and 256K cache for superior performance. It also comes with free network software to allow you to connect to Token Ring or Ethernet PC networks with **full compatibility**.

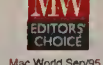
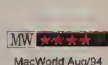
And, the OrangePC is **affordable**, with prices starting at \$799! Get a grip on your Mac!

Get OrangePC!



Orange Micro[®] inc.

"16 Years of Innovation and Excellence"
1400 N. Lakeview Ave., Anaheim, CA 92807
(714)779-2772



It runs with NetWare



Microsoft Windows Compatible

© Orange Micro, Inc., 1995

Circle 25 on reader service card

For years, creative professionals have relied on award-winning UMAX scanners to capture the high quality images they demand as an essential part of their creative solutions. Now, UMAX has come full circle by offering them the ultimate computers on which to realize their vision...



Introducing the SuperMac S900

Designed from the ground up specifically to meet the needs of the design professional. We've kept all the best things you like — the familiarity and ease-of-use of Mac OS and compatibility with all your favorite software — wrapped it all up with the raw power of a 604 150MHz PCI-based design and delivered it at a price that can't be beat. Many unique features of the new S900 have been designed to specifically eliminate performance bottlenecks that have long troubled the market.

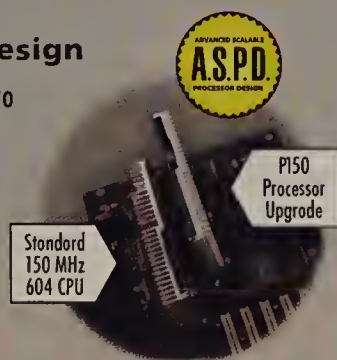


1 Interleaved Memory

Every S900 comes standard with 16MB of interleaved memory on the motherboard for fast memory access and best system performance. Others require the purchase of additional DIMMs to implement memory interleaved.

2 Advanced Scalable Processor Design

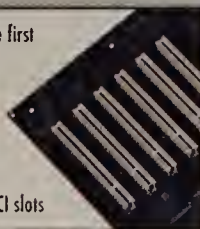
UMAX's exclusive A.S.P.D. provides easy upgradeability to dual processors or for higher speed processors as they become available. This modular configuration costs less and is far more flexible, allowing programs such as Photoshop to increase its performance up to 80% with the addition of a second processor card.



3 Exclusive PCI-to-PCI Bridge

Not only does the S900 have an amazing 6 PCI slots, it is also the first to enable burst communication between them.

The S900 is the first computer to enable direct communication between ALL PCI slots




UMAX's exclusive PCI-to-PCI Bridge design enables direct communication between all PCI cards with the greatest performance, no matter which slots they're inserted in, also making it more expandable and easier to configure.

4 E100 I/O & Networking Card

To increase performance even further, UMAX offers the ultimate combination upgrade that gives you both Ultra-Wide SCSI and 100Base-T on one easy-to-install PCI card. The 100Base-T boasts data transfer over networks up to ten times the speed of standard 10Base-T connections. Ultra-Wide SCSI provides 16-bit wide data access at rates up to 40MB/sec. (4 times the speed of regular SCSI)



MODEL		Processor Type	CPU Speed	Hard Drive Capacity	PCI Slots	Onboard RAM	Level2 Cache	CD ROM Drive	Graphics Card	Drive Bays	PRICE*
 SuperMac S900L	Tower	604	150 MHz	2 Gbyte	6	16 MB	512 K	8x Speed	4MB VRAM	5	\$ 4395

* Suggested Retail Price

UPGRADE OPTIONS	PRICE*
▶ SuperMac E100 Extended Performance Ultra-Wide SCSI / 100Base-T	\$ 495
▶ SuperMac P150 604-150 ASPD Processor Upgrade	\$ 995

* Suggested Retail Price

S900L BUNDLED SOFTWARE

Conflict Catcher 3.0™ FVB CD-ROM & HDTool Kit™
ASANTÉ Net Doubler™ Mac OS

UMAX
Computer Corporation

FOR MORE INFORMATION CALL:
1-800-232-UMAX

© 1996 All rights reserved. SuperMac logo is licensed exclusively to UMAX Computer Corporation ▶ Headquarters and Sales: 47470 Seabridge Dr. Fremont CA 94538. Fax: (510) 623-7350 ▶ Engineering: 4800 Great America Parkway, Ste.#200 Santa Clara, CA 95054 Tel: (408) 327-8700

Circle 200 on reader service card

SUPERmac®

Computers that Work the Way You Do.

▶ <http://www.supermac.com>

WANT TO SEE HOW
MUCH MORE MICROSOFT
OFFICE CAN DO?

JUST ADD A LITTLE
MORE MEMORY.



For more information call us at

(8 0 0) 5 8 8 - 5 4 0 1

or look for us on the Net:

<http://www.kingston.com/mw.htm>





When you add more memory to Microsoft® Office, interesting things begin to happen. Suddenly, you're scanning powerful images into your presentation. And moving complex graphics around at will. You can download data from the Internet to support your cogent analysis. Then e-mail the whole thing to your grateful associates in London. All before lunch. Since you've already invested in Microsoft software, why not be sure you have the finest memory to match? That, of course, would be Kingston®

memory. Kingston design engineers use exactly the same specifications system manufacturers, like Apple®, use. So compatibility is assured. And we test every cell on every chip on every module. (On a 16 megabyte module, that's 128 million cells.) As a special offer from Microsoft and Kingston, registered Macintosh® users of Microsoft Office can purchase 8 megabytes of Kingston memory for only \$79.* Call (800) 588-5401 today. And get ready to move mountains.

Kingston
TECHNOLOGY CORPORATION

GREAT MACINTOSH[®] PRODUCTS FROM COREL[®]

Coming This Spring.. **COREL DRAW! 6** for the Macintosh

COREL SUPER TEN

ROYALTY-FREE HIGH-RESOLUTION PHOTO PACKS

Each Corel[®] Professional Photos on CD-ROM Super Ten Pack contains 1,000 colorful and captivating images for you to enjoy.

Titles:

- | | | |
|-----------------------|-------------|-----------------|
| 1. Animals | 5. Food | 9. Underwater |
| 2. People | 6. Cars | 10. Textures |
| 3. Select Photos | 7. Aircraft | 11. Textures II |
| 4. Great Works of Art | 8. Gardens | |



\$37.98*
Each



Wild Board Games™
The fun way to learn popular board games
For Macintosh[®] and Windows[®] 3.1

\$19.98*



Red Rhino™
Read, color and search for the balloon with Red Rhino
For Macintosh[®] and Windows[®] 3.1

\$19.98*



NN'n N Toy Makers™
An interactive toy making adventure
For Macintosh[®] and Windows[®] 3.1

\$19.98*



Green Bear™
Read, color and decorate with Green Bear
For Macintosh[®] and Windows[®] 3.1

\$19.98*



Yellow Hippo™
Read, color and hunt for yellow items with Yellow Hippo
For Macintosh[®] and Windows[®] 3.1

\$19.98*



Nikolai's Trains™
An interactive journey across the landscape of a child's imagination
For Macintosh[®] and Windows[®] 3.1

\$19.98*



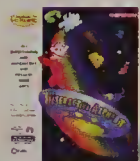
Blue Tortoise™
Read, color and race to the picnic with Blue Tortoise
For Macintosh[®] and Windows[®] 3.1

\$19.98*



Wild Cards™
The fun way to learn popular card games
For Macintosh[®] and Windows[®] 3.1

\$19.98*



The Interactive Alphabet™
The imaginative way to learn your ABC's
For Macintosh[®] and Windows[®] 3.1

\$19.98*



Turn Around Turtle™ Show and Tell
Go on an adventure with Turn Around Turtle
For Macintosh[®] and Windows[®] 3.1

\$19.98*



Pandora's Box™
Learn the wonders of Greek mythology through Pandora's Box
For Macintosh[®] and Windows[®] 3.1

\$19.98*



All-Movie Guide™
The ultimate guide to the movies
For Macintosh[®], Windows[®] 3.1 and Windows[®] 95

\$19.98*



Bernard of Hollywood's™ Marilyn
A multimedia journey through the life of Marilyn Monroe
For Macintosh[®] and Windows[®] 3.1

\$19.98*



Bernard of Hollywood's™ Pin-ups
A multimedia retrospective of Hollywood's most famous pin-ups
For Macintosh[®] and Windows[®] 3.1

\$19.98*



Corel[®] CD HOME Super Ten Pack Series
Ten great titles in each pack for one amazing price
For Macintosh[®] and Windows[®] 3.1

\$37.98*
Each



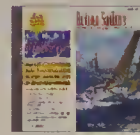
Gallery™ 2 for Mac
The world's best CD-ROM clipart...and more

\$64.98*



Corel[®] Stock Photo Library 1, 2 & 3
20,000 royalty-free, high-resolution photos on 200 CD-ROMs in each library

\$899.98*
Each



Corel[®] Professional Photos on CD-ROM
The world's leading photo CD-ROM collection

\$18.98*
Each

Enter the Corel \$3,000,000 World Design Contest!
(September '95 to July '96)
To receive a faxed copy of the contest rules and an entry form, please call:
1-613-728-0826, ext. 3080, Document # 1125.
To leave a message: 1-613-728-0826, ext. 81609.
To send a fax: 1-613-728-2891.



1-800-248-0800

Please refer to source code CT25.

KUR-0235-US



<http://www.corel.com>
Call now for faxed literature!
1-613-728-0826 ext. 3080
10,000,000 CD-ROMs shipped!

Corel is a registered trademark of Corel Corporation. All-Movie Guide is a trademark of Matrix Software Inc. Bernard of Hollywood's is a trademark of Renaissance Roads Productions, Inc. and is used under license. Blue Tortoise, Green Bear, Red Rhino and Yellow Hippo are trademarks of Alan Rogers. Nikolai's Trains and NN'n N Toy Makers are trademarks of I. Hoffman + Associates Inc. Windows is a registered trademark of Microsoft Corporation in the United States and/or other countries. Macintosh is a registered trademark of Apple Computer, Inc. All product and company names are trademarks or registered trademarks of their respective companies.

Circle 78 on reader service card

Letters

Screwy PowerBooks

I HAVE NEVER WRITTEN TO THE EDITOR of a magazine, but I have a suggestion I feel compelled to share with you. When you print a tip that involves removing a plastic part on the front of a PowerBook (*Quick Tips*, May 1996), no matter how carefully you suggest removing it, please please include a source for replacement parts. I am writing this on my beloved 520c with the plastic hinge cover dangling—every single clip broke off. I am convinced there is *no* way to remove the front panel without breaking the clips.

ART O'DEA

Newburyport, Massachusetts

I didn't think I was so nimble-fingered! Replacement front panels generally run between \$9 and \$15 (part number 9220789).—Ed.

Don't Need No Stinkin' DNS

I AGREE WITH YOUR AUTHOR ON HOW easy NetPresenz 4.0 is to set up and use (*Reviews*, May 1996). I've been using it (and the previous versions) for more than three years now, and it's an invaluable tool in distributing my freeware, Macintosh listserver Macjordomo.

But in the context of an otherwise good review, I have to disagree that "no built-in DNS" is a con. That's just plain ridiculous. Why should a WWW/FTP server come with DNS service? Do you know of *any* WWW/FTP server in *any* platform—Mac, Unix, Windows—that does that? NetPresenz does not make me coffee in the morning, either, but for the money it's the most useful shareware program ever written.

MICHELE FUORTES
New York, New York



Oh My God—Word 6.0

MAY'S THE DESKTOP CRITIC HAD ME rolling on the floor laughing. I debated for a long time if Word 6 was worth the price of admission. Despite the prolonged flame wars on the newsgroups, and *Macworld's* less-than-enthusiastic review, I finally caved in and bought it.

During the past couple of months, I've learned something very valuable to me and other network consultants. The Mac version and the Windows version are so exactly alike that it actually makes my job easier. I no longer have to come up with three flowcharts in my head on how to do X to achieve Y on the Mac, on Windows, or on 95. Dare I say, Thank you, Microsoft? Wait—maybe not. They still make Microsoft Works, don't they?

MATTHEW SCHULTZ
via the Internet

IF DAVID POGUE IS RIGHT IN HIS CRITICISM of Word 6—and I most definitely think he is—then maybe we should wait for Word 7. And if Microsoft would pick up on many of Pogue's implied recommendations, they would quickly realize that they already have a great prototype available. I have been beta-testing it for a few years and really like it—it's called Word 5.

JAAP FEENSTRA
Rae-Edzo, Northwest Territories, Canada

I BELIEVE THAT MOST MACINTOSH users' shock and outrage might have been avoided had Microsoft simply named the application more appropriately: WinWord 1.0 for the Mac.

CHARLENE STROUP
via the Internet

A MAJOR CASUALTY OF THE UPGRADE not mentioned is the mathematical typesetting formulas. Word 5 gave the user a choice of using Equation Editor or formulas. As a high school math teacher, I find formulas much more efficient and easier than the clumsy Equation Editor. The formulas are useful in some nonmath work as well.

SAM CROUSEY
Honolulu, Hawaii

DAVID POGUE OMITTED THE MAIN reason I won't use Word 6. I have more than 400 glossary items in Word 5. Word 6 did away with the Glossary command and substituted Autotext, which is limited to 150 items. Excuse me? I can't figure out why anyone would want to alter a program to make it do less than the previous version.

DAVID STEINER
Lafayette, Colorado

continues



Bryce™ 2

DIVE IN THIS SUMMER!

- **NEW! Incredibly fun and powerful 3D imaging software.**
- **NEW! DXF model import.**
- **NEW! Intuitive interface and editing controls.**
- **NEW! Boolean rendering.**
- **NEW! Exclusive, real-time 3D terrain editor.**
- **NEW! Multiple light sources.**
- **NEW! Instant nano previews.**

Find Out More! Call Us Today.

1.800.472.9025

Ask for Dept. BM08

MetaTools™

The Visual Computing Software Company

<http://www.metatools.com>

Ask about our hands-on Web training!

©1996 MetaTools, Inc. 6303 Carpinteria Ave., Carpinteria, Santa Barbara County, CA 93013
805.566.6220 Fax: 805.566.6385 Internet: metatools@aol.com Bryce and MetaTools are trademarks of MetaTools, Inc. All other product names are trademarks of their respective owners. Scene created and rendered entirely in Bryce 2. DXF models owned by ViewPoint DataLabs International. Used with permission.

LETTERS

CORRECTIONS

- The Polaroid PDC-2000 does not use PC Cards ("Digital Cameras on the Move," News, June 1996).
- Neon Software's LANsurveyor 3.0 includes SNMP support for TCP/IP (Reviews, May 1996). A notification option enables LANsurveyor to scroll to and highlight a map icon when a device goes into alarm state.

AS A WRITER OF MANY SCIENTIFIC articles, I find that the most annoying thing about Word is the way the formatting of the endnotes and footnotes gets completely screwed up when co-workers exchange Word 5 and Word 6 files, despite the files' previously appearing and printing identically on our respective versions and machines. Long live any other word processor.

TONY GIN

Christchurch, New Zealand

I DISCOVERED—THE HARD WAY—SOMETHING else that Microsoft has eliminated from Word 6. I was working long-distance with a client on a lengthy document that was broken out into legal-style numbers. The client said, "Take a look at paragraph 244.32.5." I whipped open the Find command, entered the paragraph number, clicked on OK, and then . . . beep! Word 6 no longer searches for its own automatic numbers. I had to scroll through a 400-page document for 5 minutes, at the end of which my client was mighty annoyed!

DOUGLAS L. LIEBERMANN

Skokie, Illinois

Heloise@Home

IN "HOME OFFICE BLUEPRINT" (MAY 1996), James A. Martin mentions Timeslips for recording time and expenses on projects. I've been using a much cheaper alternative in my consulting business for several years now. TimeSlice 1.3.4 (\$40; Maui Software, 808/573-0011) has many advanced features, and there's a fully functioning demo available online. Mr. Modesitt of Maui Software is a dedicated Mac developer who keeps making his applications better and better.

PETER FLECK

Minneapolis, Minnesota

Readers interested in TimeSlice can download the program from Maui Software's Web page (<http://www.aloha.net/~mauisw/>) or Macworld Online (<http://www.macworld.com> or keyword Macworld on America Online). Maui Software also makes TimeTracker 2.8.3, a less powerful version of TimeSlice, for \$25, as well as FileMaker Pro and ClarisWorks templates to organize exported data. Both TimeSlice and TimeTracker come in German, French, Swedish, and Norwegian versions, too.—Ed.

Tales from the Encrypt

IN GENERAL, I SUPPORT THE ARGUMENT presented in "Civil Rights Activists Say, 'Sniff This!'" (Viewpoint, May 1996), but as a resident of Italy and a Macintosh user, I have to report that using Zimmerman's exceptional work, PGP, is neither as easy nor as simple as your concluding paragraph implies.

First, European users are restricted to a "corrected" version of PGP—slightly less powerful than the U.S.-Canada version, but still potentially impenetrable. Second, learning PGP for Mac requires almost as much work as doing brute-force decryption, and I admit defeat there. Rumor persists of a user's manual for Macintosh, but I haven't been able to locate it.

While I like the idea of nuisance encryption, I am unable to practice it, and have reluctantly dumped PGP into the untouchable vastness of the Trash.

ROBERT D. CALLAHAN

Montanare di Cortona, Italy

DENISE CARUSO IS CORRECT THAT we are all harmed by bills such as the bipartisan Telecommunications Reform Act. And she is correct that we all need to take action against this kind of intrusion into our lives by government. But her suggestion that we encrypt our messages is almost like giving up, and only finding a way to live with such bad legislation. Instead, we need to protest at the voting booth.

GEORGE REIS

Santa Ana, California

I COULDN'T AGREE MORE WITH DENISE Caruso—everything should be encrypted. But the political statement of doing so needs to be followed by the political act of disempowering those cur-

continues

Circle 4 on reader service card



MultiSync MT800
12.7" w x 5.9" h x 16.0" d, 17.6 lbs.

With their extraordinary lightweight design, the new MultiSync® MT600 and MT800 projectors can go anywhere you can go. Down the hall, or down the road.

And thanks to their uncanny ability to project bright, crisp and evenly illuminated images, you no longer have to sacrifice image quality for portability.

You see, MultiSync MT™ projectors deliver full-color, high-resolution images that can be adjusted to as large as 300" diagonally. A simple task via a remote that controls your computer and presentation, as well as the projector.



MultiSync MT600
12.7" w x 5.9" h x 16.0" d, 16.5 lbs.

All you have to do is plug in a source, which, due to simple connectivity and compatibility, can be anything from a notebook computer to a VCR.

Now, shouldn't you explain all this to your coworkers? They're still wondering why you strolled past the water cooler holding this magazine out in front of you. To find out how to get a hold of the real thing, call 1-800 NEC-INFO.

SEE, HEAR AND FEEL THE DIFFERENCE.™

NEC

**EXACTLY HOW PORTABLE ARE THE NEW
MULTISYNC MT PROJECTORS?
GRIP THE SIDES OF THIS MAGAZINE
AND WALK AROUND THE OFFICE.**

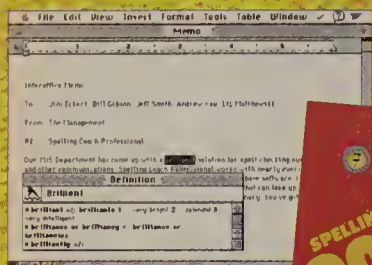


Visit our new web site at <http://www.nec.com>

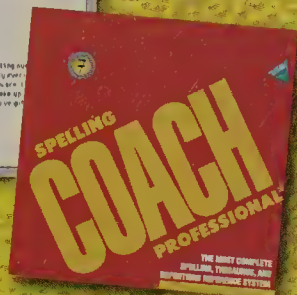
For more information via fax, call 1-800-366-0476 and request document #68201. MultiSync is a registered trademark and MT and See, Hear and Feel the Difference are trademarks of NEC Technologies, Inc. GSA# GS.D3F4070B
©1996 NEC Technologies, Inc., Key # 28575

Circle 14 on reader service card

Coach Pro Calls Great Spelling Plays



★★★★ — Macworld
★★★★ — MacUser



Don't get socked by typos and misspellings. Get Spelling Coach Professional™. It works interactively and in batch mode with your favorite e-mail editors, word processors and all leading software programs to signal fumbles in spelling, punctuation and capitalization. Coach calls in corrections from Merriam-Webster's dictionary of over 95,000 words and 93,000 legal, medical and technical terms. Instantly look up definitions for over 85,000 words or consult its BigThesaurus™ of 1.4 million combinations of synonyms, antonyms, compoed, contrasted and related terms.

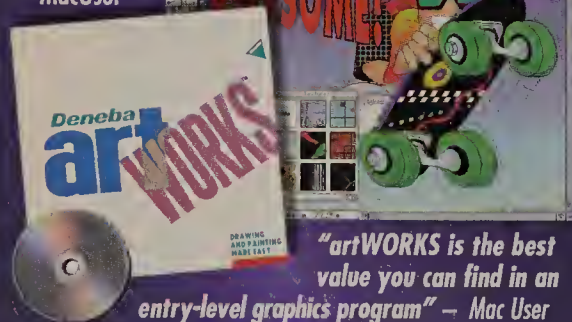
**Put Spelling Coach Professional
on your team for just \$49⁹⁵!**

**DENEBA
SOFTWARE**
(305) 596-5644
<http://www.deneba.com/>

**PC
Mac Connection**
800-998-0014
SKU #1768

Masterful Artworks Hailed by Critics!

★★★★½
— MacUser



**"artWORKS is the best
value you can find in an
entry-level graphics program" — Mac User**

Acclaimed by reviewers and users alike, Deneba artWORKS™ puts crisp object-drawing and vivid 24-bit painting and image editing tools in one handy place. In short, everything you need to touch up family photos, create dazzling newsletter mastheads, school reports, business graphics and more. It's the perfect companion for any color ink jet printer. Use the artWORKS 8,000 Clip Art Image Collection and 500 Fonts to get started on your next work of art — included FREE on CD-ROM.

**And for just \$49⁹⁵, this masterpiece
won't break your bank.**

**DENEBA
SOFTWARE**
(305) 596-5644
<http://www.deneba.com/>

**PC
Mac Connection**
800-998-0014
SKU #11055

LETTERS

rently spying on us and all those hoping to do so in the future. I hope computer users as a group develop the political savvy and the cohesiveness necessary to accomplish this.

PATRICK L. LILLY
Colorado Springs, Colorado

The Trouble with Netscape

I AM TYPING THIS MESSAGE IN THE VERY E-mail interface described in your review of Netscape Navigator 2.0 (May 1996), and it most certainly does support quoting E-mail in replies. In fact, there are two ways you can do this: (1) at the top of the window that comes up after clicking the To: Mail button are five buttons—Send Now, Quote, Attach, Address (book), and Stop; and (2) it is possible to quote original messages by default by checking a box in the Composition section of Mail and News Preferences.

CHRIS HANSEN
via the Internet

ABOUT THE USENET NEWS-READER interface in Navigator 2.0, it's unnecessarily complicated, yes, but once properly configured it works like a charm. You have to see it to believe the speed—it's faster than any other news reader.

KRISHNA MOHAN
Valsyn North, Trinidad, West Indies

I FOUND MATTHEW HAWN'S REVIEW OF Netscape 2.0 overgenerous. I've been using Netscape since its initial version and I consider 2.0 the worst one yet. I like the idea of an all-in-one browser/news-reader/E-mail program, but this new Netscape is not it. I even downloaded Microsoft's Internet Explorer in an attempt to end my suffering. What we need is a lean, mean browsing machine—not an overweight, underfeatured, unreliable one.

CLINTON KRENBREK
Saint Albert, Alberta, Canada

NAVIGATOR 2.0 IS INNOVATIVE, NO question about it. The problem is that Netscape is pushing the envelope on sexy stuff, like JavaScript and plug-ins, while ignoring more basic issues like stability and HTML compliance (there are any number of useful, standard HTML tags that Navigator does not support and that the company has evidently promised will remain unsupported).

Is Navigator the best browser available? Probably. Is it top-quality software? No. Since Netscape has faced relatively little real competition in the browser wars, users must hold the company's feet to the fire and demand better. Giving the product four stars is being a little too nice, and sending the wrong signal.

ADAM RICE
Austin, Texas

RedShift Redux

I JUST FINISHED READING YOUR REVIEW of RedShift 2 (May 1996). A not-so-obvious con is the lack of an Input New Objects Found feature. A recent example is comet Hyakutake. I wanted to use RedShift 2's wonderful texture mapping to create a movie of the comet's path, only to find that RedShift doesn't support that feature. Maris's tech support told me that because the database is on a CD-ROM, additions aren't possible. Why? Voyager II by Carina, also on CD-ROM, allows Input New Objects Found, but Voyager II doesn't have the texture-mapping capabilities of RedShift 2. I use both programs for astronomical applications; both are excellent, but RedShift's inability to add new objects should be taken into account when purchasing astronomical software.

MICHAEL E. GAINES
Morris Plains, New Jersey

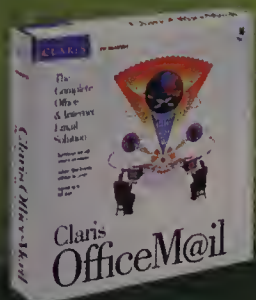
Credit Where It's Due

NICE JOB ON YOUR REVIEW OF THE current crop of conjuring CDs (Reviews, May 1996). I just wanted to drop you a note to tell you that the uncredited "witty . . . likable . . . showman" performing the effects on the Magic: An Insider's View CD-ROM is Marc DeSouza.

TRACY EVANS
Missouri City, Texas

Letters should be sent to *Letters, Macworld*, 501 Second St., San Francisco, CA 94107; via fax, 415/442-0766; or electronically to CompuServe (70370,702), MCI Mail (294-8078), America Online (keyword *Macworld*), AppleLink (*Macworld1*), or via the Internet (letters@macworld.com). Include return address and daytime phone number. Due to the high volume of mail received, we can't respond personally to each letter. We reserve the right to edit all letters. All published letters become the property of *Macworld*. **m**

Claris OfficeM@il makes the incredibly difficult remarkably easy.



AT LAST, E-MAIL FOR THE WHOLE OFFICE IN JUST SIX EASY STEPS.

No longer does the prospect of setting up office and Internet e-mail have to seem like an impossible putt. Now there's OfficeM@il™ software from Claris: the easiest, most affordable solution to sending e-mail around your office, and around the world. OfficeM@il is a true all-in-one solution; in one box you get server software for office e-mail, pre-configured gateway software for Internet e-mail and Claris Em@iler™ e-mail management software for five users. OfficeM@il can support up to 100 users, so it grows as your business grows.* And since it is so easy to set up and maintain, you won't need the help of a network administrator. In fact, it's as easy to set up as counting to six.

- 1.** Enter your name & address. **2.** Type in each user's name.
- 3.** Select your modem type. **4.** Choose your company's Internet address. Example: your recipients will see joe-golfer@hole-in-one-corp.clrs.com
- 5.** Enter billing information for your Internet e-mail access.** **6.** Install Claris Em@iler on each user's desktop.

It really is that easy. Ask your local reseller for OfficeM@il today, or call Claris at 1-800-293-0617 ext. 1205. Or for more information, log on at www.claris.com

CLARIS®

Simply powerful software.™

In Canada please call 1-800-361-6075 ext. 1205.

*Additional copies of Claris Em@iler are sold individually or in packages of five.

**Internet access is available through the Clarislink™ Service and requires a monthly service fee.

© 1996 Claris Corporation. All rights reserved. Claris is a registered trademark and Claris Em@iler, OfficeM@il & Simply Powerful Software are trademarks of Claris Corporation in the U.S. and other countries.

The
world's
best color
ink jet printer.

Right here.
In black and
white.

And

magenta.

Cyan.

Red.

Yellow.

Orange



THE EPSON STYLUS PRO.

What makes it the world's best?

Advantages like true 720 x 720 dpi

and Microdot Technology for

dazzling Photo Quality color

printing on any media. Superior

ink jet technology for a cleaner,

more consistent dot pattern.

Exclusive features like built-in

Ethernet and the option to

add Adobe® PostScript® Level 2

with PANTONE® CALIBRATED™

approved colors. For about \$459.

So now it's easy for all your

documents to be seen in their

best light. Not to mention color.

PLATFORM COMPATIBILITY:

PC, Mac & UNIX.

Automatic switching
across platforms.

STYLUS PRO

720 x 720 dpi on plain paper

NETWORK CONNECTIVITY
ETHERNET & LOCALTALK

Now for about \$459.

CALL 1 800 GO EPSON

ASK FOR OPERATOR 3064



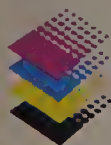
POSTSCRIPT
Software From Adobe



PANTONE
CALIBRATED

EPSON

Stylus
Pro



ELECTRICOLOURS

1996 Color Performance By Region



Since the mid-eighties, a pallor has seeped into the colorbooks and swatches of American interior design. But after a monochromatic decade, there's change on the horizon. 1996 will forever be known as the Year of Magenta.

<input type="checkbox"/> Operate	
<input type="checkbox"/> Data	
<input type="checkbox"/> Paper Out	
<input type="checkbox"/> No Ink Cartridge	
Courier	Font
Roman T (PS)	
Sans Serif H (PS)	Economy
Roman	Condensed
Sans Serif	
Prestige	Load/Eject
Script	
<input type="checkbox"/> Pause	

LASER QUALITY

black text
that's perfect
because our
dots don't
splatter. See?

Year

You make your document smart—our 720x720 dpi Photo Quality color will make it brilliant.

YOU'VE GOT TO SEE IT IN **EPSON** COLOR.



1996
Macworld
WORLD CLASS AWARD
WINNER

SHOULD MINICAD 6 BE YOUR CAD SOLUTION?

- ✓ A proven market leader that handles any job; 2D, 3D, cost estimating, and more.
- ✓ A program tailored to your needs. Specialized tools for many design industries: architecture, engineering, landscape, space planning, food service, theater/lighting design, etc.
- ✓ A program that's easy to use, easy to buy and easy to customize to your specifications.
- ✓ A cross platform program for both Macintosh and Windows systems.
- ✓ A program from a stable company that stands behind its products with aggressive R&D.
- ✓ A program with a RISK-FREE way to try it before you commit.

MiniCad 6® ... THE FULL-FEATURED CAD PROGRAM with INTEGRATED PROFESSIONAL SOLUTIONS



MINICAD 6: A COMPLETE CAD PACKAGE!

MiniCad 6 has just what you're looking for: a complete 2D/3D drafting environment, powerful database and built-in macro language. A QuickTime™ 3D animation tool and QuickDraw™ 3D file support to add sizzle to your presentations. Even digital terrain modeling! All highly organized and very easy to use!

FREE DESIGN AND DRAFTING TOOLKIT™

Packed with thousands of symbols, tools, commands, templates, parametrics, formatted reports, worksheets and sample files targeted at specific industries. No extra symbol libraries to buy! These specialized feature sets are powerful, complete and already in MiniCad 6, giving you both design flexibility and targeted industry solutions.

INTERNATIONALLY RECOGNIZED

Now in its 10th year, Graphsoft's MiniCad is the best-selling CAD program for the Macintosh; utilized by design professionals in over 80 countries and 12 languages.

TRY IT RISK-FREE FOR 30 DAYS!

When you buy MiniCad 6 from a participating dealer, you'll get Graphsoft's no-hassle 30 day money back guarantee. You'll also get 18 months of free technical support, a 24 page quarterly newsletter and multi-media CD that provides both Quicktime movies on the operation of each tool and command, and real working sample files from around the world.



Diehl Graphsoft, Inc.

NASDAQ TRADED COMPANY
Makers of MiniCad 6, Blueprint and
Timuth for Macintosh. MiniCad 6 for
Windows coming soon!

MACINTOSH WINDOWS

For more information please contact Graphsoft at 10270 Old Columbia Road, Columbia MD 21046 1-800-413-0935 or 410-290-5114
Fax: 410-290-8050, Marketing/Sales: www.graphsoft.com In Canada call Paxar at 1-800-260-0905 For Academic pricing call 1-800-531-3227

Quick Time, QuickDraw and Macintosh are trademarks of Apple Computer. Windows is a trademark of Microsoft. MiniCad and Design and Drafting Toolkit are trademarks of Diehl Graphsoft Inc.

Circle 46 on reader service card



State of the Mac

by Adrian Mello

Apple Articulates Its Internet Plans

CAPITALIZING ON THE MAC'S STRENGTHS

PEOPLE OFTEN EXPERIENCE the Internet by flitting from site to site, riding a wave of information. Apple CEO Gil Amelio proposes that Apple insinuate itself into the Internet, using the wave of change that the Internet is bringing (he calls it a *mega-trend*) to propel Apple out of the water and toward firmer ground.

Apple doesn't just have a strategy—it now has a dedicated Internet division called AppleNet, headed by Dr. Larry Tesler, vice president of Internet platforms and chief scientist. AppleNet is part of the companywide restructuring Amelio announced at Apple's Worldwide Developers Conference in May (see "News Extra," *Macworld*, July 1996, "Apple's New CEO Gets Tough"). Akin to a state-of-the-union speech, Amelio's address outlined Apple's technology plans for the coming year, to the people who need to implement them—Apple developers, both within the company and outside.

No mere reorganization, this is quite a significant move. From a public-relations standpoint, putting a vice president in charge of a division signals Wall Street analysts and Apple's investors that the company is seriously focusing its efforts.

From an internal, strategic point of view, the new division provides a focal point for Apple's many Internet projects. Amelio is taking a page from the book of one of the most successful computer companies in the business: Microsoft. Microsoft might not always have the best technology, but it always shows, convincingly and in great detail, how its products work together and how they fit into the marketplace. Creating an Internet division gives Apple the same opportunity.

What Apple Promises

Tesler says Apple's strategy will address accessing, creating, and delivering Inter-

net content. The company's goals are to make using the Internet easier and to make the Internet more media-rich.

Apple is shipping Macs with at least 12MB of RAM, a 28.8-Kbps modem or on-board Ethernet (depending on the model), and Internet connection software—guaranteeing that with only a few clicks you can get on the Internet. In the longer term, Apple plans to integrate Internet services into the Mac OS using Java, Sun's popular development environment for the Internet, and OpenDoc, Apple's component architecture.

At the heart of Apple's Internet strategy is OpenDoc, potentially the company's most powerful lever. Components are key to creating the next generation of

components technology allows every OpenDoc part to be used instantly with any OpenDoc app. Based on demos we've seen at *Macworld*, this works smoothly.

Apple also promises to make the kind of mark on the Internet that it made on the desktop with the Mac OS. "Apple's mission has always been to make complex technology simple," Amelio said at WWDC. "We did it with personal computers, and we're going to do it with the Internet. . . . We want to seamlessly build the Internet right into the Mac OS, so you have this very agile connectivity between working locally and working on the Net and really don't have to sweat the subtle differences. We don't want you to have to log on. We just want it to be there."

There are precedents. From the beginning, AppleShare client software and a LocalTalk connection shipped with all Macs (as did Personal File Sharing later), making it easy to connect to a network (much easier than for PC users). Furthermore, Apple pioneered the graphical browsing of network resources with the Chooser, a feat that has never been bested. One major complaint about the Internet is that it's not easy to use—Apple could solve that problem.

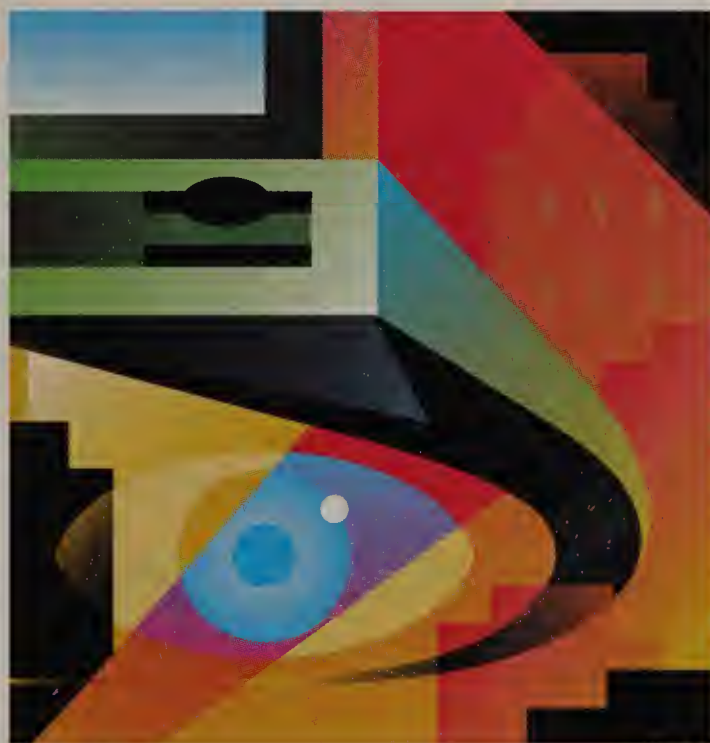
Playing to Its Strengths

The second part of Apple's strategy is to extend its domi-

nance in content creation to the Internet. The Web has pushed the Net into the graphical arena, where Apple excels.

More specifically, Apple's commitment to meld its QuickTime Media Layer—QuickTime, QuickTime VR, QuickDraw 3D, and QuickTime Conferencing—with the Web and to deliver it simultaneously on Mac and Windows platforms would define a significant role

continues



software, and Internet technology is OpenDoc's best advertisement. "OpenDoc by itself is not enough," Amelio said. "We need to . . . marry it up with Java." Tesler said of Java, "We're going to put it everywhere," including inside the Mac OS.

The move toward adoption of OpenDoc to create major, mainstream desktop applications is still a trickle, but many developers are creating parts to display or work with Internet content. OpenDoc's

on the Internet. Just getting QuickTime into Web applications bodes well for Apple—QuickTime is the best technology in its class, it has been leveraged well, and it has that Apple mystique.

If the Mac is to remain the premier content-creation platform, the standards on which it depends must be ubiquitous on both the server and the client side. Apple must help the Web become even more media-rich while dealing with the limits of bandwidth. Here again, Amelio

is focusing on a solid, existing market niche that Apple can fill.

Even though one of Apple's strengths is content creation, it competes with Netscape and Microsoft for developers' resources. Apple needs third parties—like Adobe, which made Apple the dominant media-creation platform—to develop Internet applications that rely on its technology and to help make the Mac the premier Web content-creation tool.

The final part of Apple's strategy is

the server side, and although this has improved, it could be better. Apple has never really understood the demands of the high-performance server market. As a result, the Mac OS continues to fall short in performance and flexibility when stacked up against true, hard-core server operating systems like Unix and Windows NT. Tesler's approach at WWDC was essentially to talk louder about Apple's line of Internet servers, but this doesn't address the real problems. Apple needs to talk smarter, not louder.

Apple should give up high-end Mac OS server dreams, period. There is now and always will be a need for big, powerful, networked boxes that hold and distribute lots of data very quickly. There will always be big, powerful companies that will enthusiastically bury Apple if it tries to compete in that market. Apple has the keys to its high-end server strategy in its hands: the AIX-based Network Servers 500/132 and 700/150. The company should license and sell NT on PowerPC alongside its Network Servers and work on what it knows best: desktop, peer-to-peer connectivity. Adding multitasking in Mac OS 8 (the official name for Copland) and increasing CPU speed via faster PowerPC chips will make the Mac desktop powerful enough to act as a personal server. This exploits the Internet's strongest potential—people talking to people over a decentralized network. Again, Apple has the keys to this strategy.

Apple has always been about making computing personal—it should not abandon that vision. Tesler said Apple would integrate Web-server technology into the OS, and this is exactly the right thing to do.

The Right Direction

At the conference, Amelio announced that Apple has an Internet strategy, but it isn't too far wrong to say that the Internet is Apple's strategy, and it's not a bad one. Internet users are screaming for a system that's easier to use and carries richer media types than just text, and nobody is stronger than Apple in both those areas. Given the attention the Internet has received in the past year, it seems as if Apple is just now catching up with the Internet. But when you consider Apple's strengths, you could say that the Internet is just now catching up with Apple. **m**

Research by CAMERON CROTTY, ELIZABETH DOUGHERTY, and MATTHEW HAWN.



To design or not to design? Find the creative inspiration you need in the Image Club's free monthly catalog. Over 800 fonts from the best foundries, thousands of stock photos on CD ROM (royalty free!) and tons of cool digital art, along with ideas, solutions and tips & tricks from other designers. New for you every month!

Order your **FREE** catalog:

call 1.800.387.9193 fax 1.403.261.7013 <http://www.adobe.com/imageclub/>



Image Club Graphics is a division of Adobe Systems Incorporated
WOR06



Circle 50 on reader service card

CREATIVE FUNWARE™

Kai's Power GOO™

ONLY \$49.95*
"IT'S THE BARGAIN OF THE CENTURY!"
—AP NEWS ARTICLE 5/96



Realtime Liquid Image™ Software

"Make Your Pictures Move Like Liquid"

GOO is Fun

Turn still pictures into images that feel like liquid on your screen. You've never seen anything like it.

GOO is Versatile

Use Fusion™ tools to blend pictures together — combine the eyes of one image with the face of another.

GOO Anything

Choose from 80 included pictures, or images from digital cameras, picture files, scanners, Photo CD, video capture or the Internet.

GOO is Easy

Revolutionary floating user interface is simple to use. It's for everyone from 4 to 104.

GOO Moves

Create movies from your pictures. Save in QuickTime, AVI or compact "GOOvie" format.

GOO is Flexible

Create screen savers, presentations, Web pages, t-shirts, mugs, greeting cards, calendars and more.

Just GOO it!

1.800.472.9025

Mention Dept. UM08

MetaTools

The Visual Computing Software Company

<http://www.metatools.com>

CeBIT
HIGHLIGHT
1996

Best Software
of Show

Accelerated for
Power Macintosh

PERFORMS UNDER
WINDOWS 95

©1996 MetaTools, Inc. 6303 Carpinteria Ave., Carpinteria, Santa Barbara County, CA 93013. 805.566.6220. Fax: 805.566.6367. Internet: metatools@aol.com Join us in our America Online Forum (keyword: XPT). Fusion, Fusion, Kai's Power GOO, Liquid Image and MetaTools are trademarks of MetaTools, Inc. Macintosh is a registered trademark and Power Macintosh is a trademark of Apple Computer, Inc. Used under license. All other product names are trademarks of their respective owners. *Estimated street price. Individual retailers' prices may vary.

Circle 5 on reader service card



Jim McCann
President, 1-800-FLOWERS
jim@1800flowers.com



THERE IS NO SUCH THING AS A SMALL BUSINESS.

Just like there's no such thing as a small dream. There are opportunities. The kind that help

you find half a million new customers in half a day. The kind that give you a more creative

way to be heard. The kind that show you how to stand out. The kind you seize.

This is what you can do when you put your business on the Internet.

THIS IS WHAT YOU CAN DO WITH A MACINTOSH.

Entrepreneur. Leader. Innovator. Jim McCann isn't chasing his dream — he caught it. And the Internet has helped him do it. By opening up a world of new opportunities for expanding his business. By giving him ways to reach millions of new customers. By helping him turn 1-800-FLOWERS into the world's largest florist and one of America's fastest growing companies. The same way Apple® Macintosh® personal computers are revolutionizing how millions of other people are growing their business through the Internet — no matter how big their business may be. Jim McCann isn't just changing the way consumers think about buying flowers. He's changing the way Wall Street thinks about buying flowers. All it took was a dream. The courage to follow it. And a little power.



To find out how Apple can put you on the Internet, call 1-800-234-0455 for information via fax, or visit us at www.solutions.apple.com/bizinfo



HOW BIG DO YOU WANT TO BE?

Think of it as the electronic equivalent of the California gold rush.

More and more businesses are discovering the enormous revenue potential of the Internet. And more businesses are using technology from Apple to stake their claim.

No matter how big your company is, the Apple® Internet Server Solution is one of the fastest, easiest ways to grow your business through the Net. In fact, it comes with all the hardware and software you need to create a web site today. Even a media-rich site with audio, video and animation.

The Apple Internet Server Solution is designed to support over 200,000

hits per day. Because it's cross-platform, even people running Windows and UNIX® can access your site. And security is built in, so you never have to worry about break-ins.

All the software you need to easily set up, author and maintain your web site is included as well. Software avail-

able only for Macintosh®. Such as Adobe™

PageMill, which makes creating a web page as easy as creating a word processing page. No complex languages to learn. No editors or browsers to juggle.

Best of all, the Apple Internet Server Solution starts at around \$2400*.

Specially trained Apple Premium Server Resellers are available to help you determine which solutions are best for your business. They'll also be there with support — and expert advice — whenever you need it.

Which leaves you with only one thing left to do: dream big.



Apple
Premium
Server
Reseller



To find out how easily Apple can put you on the Internet and for the name of the Apple Premium Server Reseller near you, call 1-800-234-0455 for information via fax, or visit us at www.solutions.apple.com/bizinfo



*Prices may vary. See your local Apple Premium Server Reseller for information. ©1996 Apple Computer, Inc. All rights reserved. Apple, the Apple logo and Macintosh are registered trademarks of Apple Computer, Inc. Adobe and PageMill are trademarks of Adobe Systems Incorporated or its subsidiaries and may be registered in certain jurisdictions. UNIX is a registered trademark of Novell, Inc., in the United States and other countries, licensed exclusively through X/Open Company, Ltd.

The Desktop Critic

by David Pogue

PowerQuickColumn Pro 1.0.2v4b

A PROPOSAL TO MAKE MAC PRODUCT NAMES THE BEST ON EARTH

THE OTHER DAY, I WAS dumbfounded to read about a program called Movie Cleaner Pro. Now, I don't dumbfound easily. But after a moment, I realized what bothered me: here was an otherwise nifty brand-new program with the word *Pro* in its name. To me, that's a violation of the unwritten law that says: You can only add the word *Pro* to your program's name if there is, or was, a non-*Pro* version. FileMaker, MacWrite, Disk Doubler, Eudora—each became Pro only when a dramatically enhanced new version appeared.

Trivial? Yes, but names are important, especially in an industry as hype-happy as computers. Mac product names have historically reflected the Mac's superiority. In the Windows world, for example, there seems to be a law that product names must contain inscrutable numbers, inscrutable capitals, or both. The June 1996 *Windows* magazine, for example, reviews such products as ECCO Pro, pcAnywhere32, dtSearch, Visio, and CorelXARA—ahhh, poetry. For the Mac, on the other hand, we have great descriptive, evocative names like Photoshop, Spell Catcher, Panorama, LogoMotion, and Cyberdog (love that!). Clearly, this is a tradition worth keeping alive.

Therefore, for the benefit of new companies that have been doing things like slapping *Pro* onto first-time program names, allow me to hint at a better naming-and-numbering protocol. Adopt it, live long, and prosper.

Dare to differ: Use spaces.

If you have ever glanced at a Mac catalog, you might have gotten the impression that product-naming committees have broken spacebars. We've got FolderBolt, WordPerfect, and FastBack. MacLinkPlus, TextureMaker, and even—

get this—MyAdvancedLabelMaker.

Would sales of such name-impaired software as CalendarMaker, VideoDirector, or EmployeeManualMaker really suffer from the presence of spaces? I doubt it; such correctly spaced products as RAM Doubler, Speed Doubler, and Snap Mail seem to sell OK.

Having once taken a course in Pascal programming, I think I know where this tradition came from. As I recall, you couldn't use spaces in your software instructions. Commands like ReadLn and



GoTo roamed the earth. These ancient OneWord commands' descendants linger even today—in Word 6's dialog boxes, for example, or in Internet addresses.

Originally, then, someone probably thought it would be cute and different to name a computer program without spaces. Ironically, today you're distinctive if you *don't* omit the spaces.

Enough with the InterCaps.

Of course, if you're going to leave out the spaces, you're going to need some means of indicating where one word ends and

the next begins. The solution is InterCaps, where a letter in the middle of the name is capitalized. Apple is certainly guilty here—it can't seem to name products without a capital letter in the middle. AppleTalk. QuickTime. PowerBook.

And now we're raising a generation of shift-key illiterates. Product-naming committees have InterCapped names that were originally single words—FreeHand and StoryBoard, for example. Software companies are now leaving lowercase letters that *should* be capped, as in the names xRes and theTypeBook (ugh). And in day-to-day correspondence I've even seen some people mistakenly add InterCaps in names that don't actually have them, like *Macworld* and Photoshop.

If you'd like to see where the InterCappization of America is taking us, visit cyberspace. Hang around on America Online, and you'll meet teenagers who, in some weird mutation of InterCap insanity, now tYPE EvERyDay e-mAiL meSSaGes lIkE tHiS.

Pick a prefix besides Quick or Power.

In the eighties, the hot suffix to indicate newness and improvedness was *Plus*. File-

Maker Plus, Reflex Plus, Macintosh Plus.

Today, it's *Quick* or *Power*. QuickTime, QuickTake, QuickDraw, QuickBooks, QuickCam, QuickMail. PowerBook, Power Mac, PowerCurve. Not to mention Power Translator, -Tools, -Merge, -Draw, -CADD, and -Print.

Hey, amigos, let's move on. *Quick* and *Power* are so overused that they no longer have meaning. Not that they ever did—anyone who's tried to download QuickTake photos into a Mac knows what a misnomer that one is. And now that the

continues

The Best and Worst Mac Product Names

There's no televised special to accompany the awarding of these honors, but somebody's got to do it.

The Five Best Names

- TelePort (Global Village): A two-way pun, combining *telephone* with your modem *port*; the modem can be said to teleport you to another location. (One-way puns, by contrast, aren't as satisfying. For example, SitComm is indeed a blend of *StuffIt* and *communications*—but has nothing to do with TV shows.)
- Cyberdog (Apple): It fetches on command, just as the name implies.
- PaperPort (Vioneer): Describes the gadget; nice alliteration.
- CanOpener (Abbott): Another two-way pun. The program pries open any file, like a can opener, and the name speaks its motto: "I can open 'er."
- PageMill, SiteMill (Adobe): Nice juxtaposition of the modern (Web pages, sites) with the traditional (mills). I can see the copycats now—RAMMill, SpeedMill, SpreadSheetMill . . .

The Five Worst Names

- Faxstf (STF Technologies): Meaningless, and you can't even pronounce it.
- WOW (CompuServe): A new online service. Cornball beyond belief. Gag me.
- FotoFun (Fargo): Terrific photo printer, but would it have diminished FotoFun's appeal to spell the name right?
- Scrutiny in the Great Round (Caliope): It's a CD-ROM, but you'd never know it. Not only conveys no information, but implies a double entendre.
- Performa (Apple): True, focus groups have shown that consumers like names ending with a (to wit: Honda, Toyota, Acura). But this one sounds like Sylvester Stallone trying to pronounce "Performer."

feeblest, cheapest Mac available is, in fact, a Power Mac, the *Power* prefix isn't even serving its purpose of differentiation. See also Gilbert & Sullivan, "When everyone is somebody, then no one's anybody."

We should keep an eye on the *Double* suffix, too. It's also showing signs of Creeping Cliché Syndrome. After doubling our Disk, RAM, Speed, CPU, and Net, we don't want to dilute that one into meaninglessness as well.

Separate your company's name.

Microsoft invented the practice of including the company's name in each product title: Microsoft Word, Microsoft Excel, Microsoft Works, and so on.

These days, everybody's doing it. Companies imagine they're slyly building a corporate image, reinforcing the company name, by making you associate the program you own with the company that made it. Claris follows this naming practice (ClarisWorks, ClarisImpact, Claris Organizer). So do Quark, Netscape, and others.

Oddly enough, this strategy worked so well that it backfired. Today, the aver-

continues



MacWorld - DEC '94

"...the FlexCam is simply the better camera."
Deke McClelland - MacWorld Magazine 4/96

Cameras for other uses

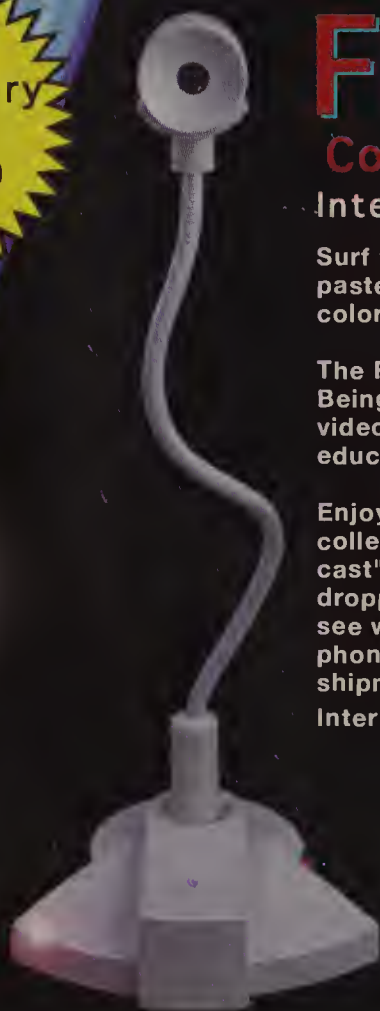
VideoLabs makes a wide variety of desktop and scientific cameras:

- Teaching Cam for close up in the classroom!
- Document Cam for clear presentations!
- Microscope Cam for the Lab!
- FlexCam - a versatile desktop camera for desktop publishing!

FlexCam VC requires a Macintosh 840AV or higher.
A PowerMac 7400AV or higher recommended.
Being There 3.0 or higher for conferencing compatible.

FlexCam, VC, and Being There are trademarks and VideoLabs is a registered trademark of VideoLabs, Inc. All other names, logos and logos are registered trademarks of their respective companies.

**New
Introductory
Price
\$399.00**
MSRP: \$429.00



FlexCam® VC

Color Video Camera

Internet Videoconferencing

Surf the Internet. Send your friends Email. Cut and paste. Now what? FlexCam VC*. Nobody has sold more color videoconferencing cameras than VideoLabs.

The FlexCam VC is bundled with two licenses for BeingThere 3.0**, which provides high-powered videoconferencing over the Internet or corporate and educational networks. ISDN support is also available.

Enjoy face-to-face, full-color communication with colleagues, "conference call" with a group, or "broadcast" to a larger audience. Share your work by dropping files onto a co-worker's picture, and instantly see why FlexCam VC is a better solution than costly phone calls, black-and-white faxes or overnight shipments. Call VideoLabs today! 1.800.467.7157 The Internet has never LOOKED so good.

Call us for your nearest dealer

1.800.467.7157

<http://www.flexcam.com>



VideoLabs, Inc.

10925 Bren Road East
Minneapolis, MN 55343

612.988.0055 Main Office
612.988.0066 Fax

Available through:



Circle 9 on reader service card

Now
Software
It's about time.

What kind of person can get Hootie & The Blowfish, Tori Amos, and Collective Soul on his calendar?

You. And no recording industry experience required. Announcing Now Up-to-Date™, the only schedule and contact manager that brings you the world of the Web.

Take off to sites like Atlantic Records. With a single drag and drop, you can add your favorite artist's concert dates, even a whole group of them, to your calendar. Find Tori Amos' tour date for your home town and simply drag it into your calendar, along with

a hot link back to the Atlantic site.

No typing.

No extra steps.

Need someone's e-mail address? Surf over to the Four11 site, where you can

add it into your Now Up-to-Date address book in a single drag and drop operation.

Got an intranet at work? Now Up-to-Date Web Publisher lets you post calendars and address listings with absolutely no HTML programming. Everyone has easy access to employee directories, client lists and project schedules through their Web browser—Windows 95, 3.1 and Mac OS alike.

To download a free trial of Now Up-to-Date, visit the Now Software Time Management Network at <http://www.nowsoft.com/trial3>. You'll find everything you need to get started, including links to the growing list of Web sites already publishing calendars and address books.

To find out how Now Up-to-Date can get you connected, call 1-800-730-7862.

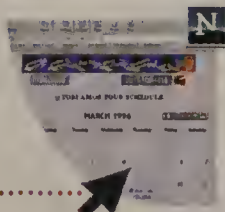
Sunglasses optional.

Designed for
Mac OS
Microsoft
Windows 95

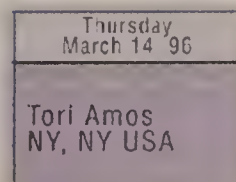


1 Visit www.atlantic-records.com
Now drag-and-drop

2



3 any event into
your personal calendar.



Now Up-to-Date, the Now Software logo, and "It's about time." are trademarks of Now Software, Inc.; Windows is a trademark of Microsoft Corp.; Macintosh and Mac OS are trademarks of Apple Computer, Inc.; the Atlantic Records logo is a trademark of Atlantic Recording Corporation; Four11 is a trademark of Four11 Corp.

Circle 38 on reader service card

age, non-guru-level Macintosh user remembers *only* the company name. You hear people say, "I wrote that document in Microsoft" when they mean Word, or "I'll just use Claris" when they mean ClarisWorks. The company-name-is-the-product scheme blew up in Quark's and Netscape's faces even more dramatically—some people I know would never recognize the actual software names, XPress and Navigator, if they heard them. That's how accustomed they are to using

the company names, Quark and Netscape, to refer to the programs they use.

One decimal point per number.

Product names aren't the only things in chaos—version numbers need help, too. I mean, look at how software companies have fallen into numbering disarray: Apple uses the mathematically questionable Two Decimal Points method ("System 7.5.3"). Claris uses a *v* in place of the second decimal point; ClarisWorks is up

to 4.0v4. Microsoft, on the other hand, waffles between using a letter (Word 5.1a) and using two decimal points (Word 6.0.1). Blyth uses logic I can't fathom at all; its current product is called Omnis 7 version 3.5. Riiiiight.

Frankly, life would be much simpler if companies would just number their versions with sequential integers: version 1, version 2, and so on. We'd all be using System 68, and it'd be no big deal.

But I suppose the Two Decimal Point system would have its merits if everyone abided by The Scheme. Which is: a software revision made exclusively to kill bugs or for compatibility affects only the hundredths place—from version 2.01 to 2.02, for example. (Such an update should be free and available as an updater online.) Any revision that actually adds features changes the number's tenths place (2.3 to 2.4). And if the rewrite is so dramatic that the document file format changes, the integer changes (5.0 to 6.0).

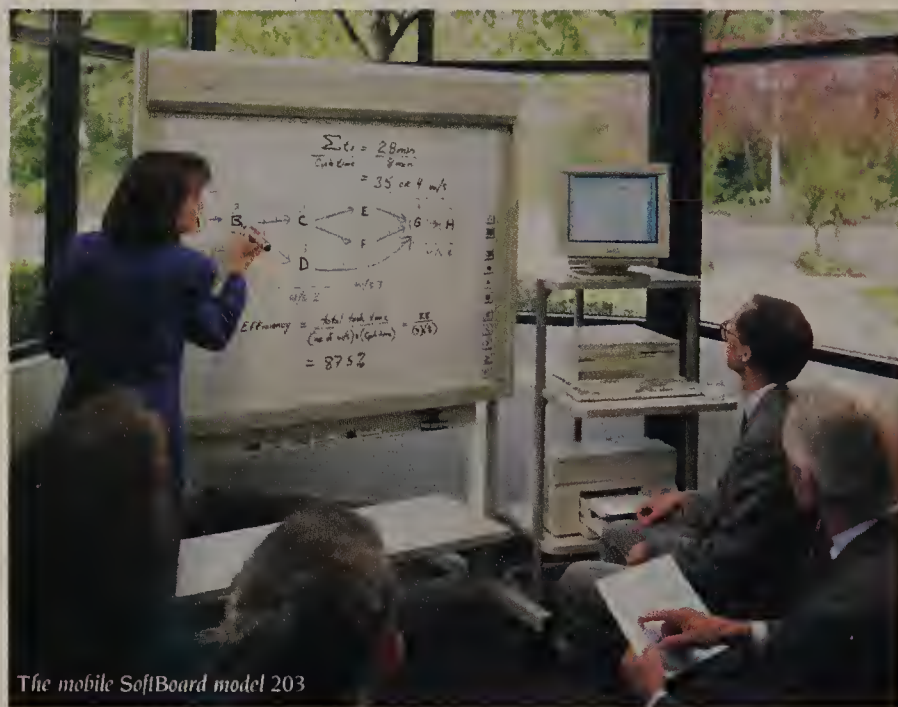
Fortunately, most software companies do abide by the aforementioned, but undocumented, Scheme. Nonetheless, I have a concern about that second decimal point. What, exactly, is the point of that point? It's a huge productivity killer: if we 23 million Mac fans each mention such a program once a day, and the extra syllable takes a third of a second to pronounce, we waste 11 people-weeks a year just speaking the superfluous decimal point. Why don't we all agree to drop the point itself, and just say "System 7.53"?

The Upshot

Look, I know how hard it is to come up with good product names. The obvious ones have already been trademarked by somebody, and each one you run up the flagpole entails another costly trademark search by another costly lawyer.

On the other hand, the difficulty faced by the namers at software companies is often exactly what drives them to creative extremes—and to really clever, terrific names.

Now, if you'll excuse me, I'm going off to get a QuickSandWich Pro 3.2v1a with TurboTomato, xLettuce, and PowerTurkey. **m**



The mobile SoftBoard model 203

Imagine the meeting where you all have the same vision, the same objectives, and the same notes.

SoftBoard
MICROFIELD

SoftBoard only *looks and feels* like an ordinary whiteboard. Whatever you create on a SoftBoard® appears instantly on your Macintosh® or Windows®-based PC. Once it's there, you can save it, print it, cut and paste it, e-mail it, fax it, even network it to multiple sites. From personal to conference room sizes, wall or cubicle mount, table top, or mobile, there's a SoftBoard to fit your needs.

For our brochure and information on all our SoftBoard models call today. **1-800-334-4922**



MICROFIELD
Microfield Graphics, Inc.
9825 SW Sunshine Court
Beaverton, OR 97005
503-626-9393, Fax 503-641-9333
e-mail: sb_info@mfg.com

©1995 Microfield Graphics, Inc. All rights reserved. SoftBoard and Microfield Graphics are registered trademarks, and the SoftBoard and Microfield logos are trademarks of Microfield Graphics, Inc. All other trademarks and registered trademarks are the property of their respective owners. All specifications are subject to change without notice.



If contributing editor DAVID POGUE were a software company, his current books would be *MacsForDummies 4.0*, *MoreMacsForDummies 2.0*, and *MacworldMacFAQs 1.0* (IDG Books Worldwide, 1996, 1996, and 1995).

DID SOMEONE SAY FREE SOFTWARE?

SEEING IS BELIEVING.

That's right. You can try a fully-functioning evaluation copy of our software for free.

Just return this card or give us a call at 1.800.796.9798 EXT. 151

GET MORE INFORMATION AND FREE EVALUATION SOFTWARE ON CD-ROM.

I'm interested in these products:

- ☐ QX-Tools™ for QuarkXPress
- ☐ PageTools™ for Adobe PageMaker
- ☐ DrawTools™ for Adobe Illustrator and Macromedia FreeHand
- ☐ Intellihance™ for Adobe Photoshop

I work on this platform:

- ☐ Macintosh
- ☐ Windows

NAME _____

COMPANY _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

PHONE _____ FAX _____

© 1994 DPA Software Corporation
All rights reserved. QX-Tools, PageTools,
DrawTools, and Intellihance are trademarks
of DPA Software Corporation. All other
names are trademarks of their respective
owners.



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES



BUSINESS REPLY MAIL

FIRST-CLASS MAIL

PERMIT NO 646

PORTLAND, OR

POSTAGE WILL BE PAID BY ADDRESSEE

EXTENSIS CORPORATION

P O Box 399

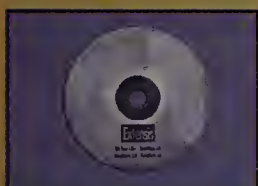
PORTLAND OR 97207-9842



YOU CAN'T RUSH
GREAT DESIGN.
BUT YOU CAN GIVE
IT A SWIFT KICK
IN THE BUTT.

EXTENSIS

<http://www.extensis.com>



GET YOUR FREE
EVALUATION CD-ROM
TODAY BY CALLING
800.796.9798
EXTENSION 151

A great designer once said, "God is in the details." Whatever that means. More important, he or she's in the corner office and thinks you're only as good as your last piece.

When it comes to great work, we believe the computer is the tool, not you. What's truly creative is what's in your head. Our powerful line of solutions help

kick your ideas out faster so you'll spend time creating, not pushing around a stupid mouse.

Want proof? We're considered a "must-have" by the head honchos of Adobe, Quark and Macromedia. Not impressed? Well, judging from the 250,000 units we've shipped so far, we're also endorsed by your fellow harried, cutting-edge designers.

Our goal is to make great designers better. As for hacks, well, at least we'll make 'em faster.



Whip Adobe Illustrator and FreeHand into shape. DrawTools' functions give you faster, more precise control over color, moving and positioning objects, and converting flat, boring images into 3-D with the click of a single button.



Publish Impact Award winner QX-Tools gives you 10 XTensions for QuarkXPress. You'll have single-click access to hundreds of commands allowing you to gain control over layers, resizing, styles, and printing, just to name a few.



Another Publish Impact award-winning application is making an impact, this time on Adobe PageMaker. PageTools' 18 plug-ins give you PageMaker's most-requested features, including a character style palette, glossary function, and word counting.



Feel smarter than your computer. Boost the IQ of Adobe Photoshop, PageMaker and QuarkXPress with IntelliHance. This critically-acclaimed tool allows your computer to automatically and intelligently adjust the quality of individual or multiple images with a single click.



©1996 Extensis Corporation. All rights reserved. The Extensis logo, DrawTools, PageTools, and QX-Tools are trademarks of Extensis Corporation. IntelliHance is a trademark of DPA Software. Third-party trademarks are property of their respective holders.

Extensis Corp.: 55 SW Yamhill St., Portland, OR 97204, 503.274.2020, Fax 503.274.0530

Circle 13 on reader service card

News

science/engineering

Mac CAD Does Fine without AutoCAD

PC GIANT'S DEPARTURE
LEAVES USERS, CAD
DEVELOPERS UNFAZED
by Charles Seiter

Although the Power Mac is the cheapest workstation-level computer on the market, two major vendors—AutoDesk and Claris—recently dropped out of the hotly contested Macintosh CAD market. What happened to PC CAD powerhouse AutoDesk? Is the Mac CAD market drying up, or is it merely a tough nut to crack? *Macworld* talked to CAD users and leading CAD vendors to find out.

AutoCAD's Tragic Tale

The bombshell news hit last year, when AutoDesk, the largest PC CAD software vendor (selling nearly 240,000 units last year, more than the entire Mac CAD market), announced that it wouldn't update AutoCAD to a Power Mac-ready Release 13.

Although AutoCAD never reached AutoDesk's ambitious (50 percent or more) market-share goals on the Mac, Power Macs still represent a much

larger (70 percent) CAD market than specialized systems, such as those based on Digital's Alpha processor, for which AutoCAD did develop Release 13. AutoDesk claims it took nearly as many in-house programmers to support the Mac version as it did Windows, and that the Mac sales didn't provide enough return on the investment (after Release 12 came out,

AutoCAD's market share dropped from about 20 percent to about 15 percent).

Two main problems faced AutoCAD's assault on the Mac market. First, beyond its position as an industry standard, there wasn't much to motivate CAD users to switch to AutoCAD—most users complained about the slow performance of both releases 11 and 12. And while AutoCAD's strength was

in mechanical and engineering design, it lacked architectural design features that had become favorites for Mac CAD users.

Second, unlike, say, word processing or graphics software, adopting CAD software is a major commitment—a company typically spends much more on training than on the software itself. AutoCAD was a relative latecomer



to the Mac market, and only 15 to 20 percent of Mac-based firms using CAD were willing to face the downtime associated with a major changeover to AutoCAD.

AutoDesk wasn't the only company having difficulty breaking the loyalty barrier in the Mac CAD market: disappointing sales forced Claris to abandon Claris CAD last year.

They'd Rather Stay Put

Historically, Macintosh representation in the various areas of mechanical engineering has been weak, but the Mac still has a big chunk (25 to 30 percent) of the architectural and design CAD market. Reports from the field indicate that most of these design houses are staying with the Mac.

Macworld interviewed key people at several Mac-based design firms and found them indifferent to AutoDesk's departure, and happy with both their platform and their current CAD software.

Bradley Skaggs at the San Francisco office of Studios, an international architectural design firm, has a typical story: "We switched to AutoCAD for a while because one major client insisted on it. It was too slow, and the staff was complaining. I can see why some mechanical engineers might like it, but we didn't. When we had to decide between AutoCAD as software and the Mac [as platform], we chose the Power Mac-ready version of Graphisoft's ArchiCAD, and now are happily using it in our offices around the world. The Power Mac is a great, cheap CAD platform."

Picking Up the Pieces

Not surprisingly, the remaining Mac CAD players welcome a less crowded playing field.

Richard Diehl, president of Graphisoft (410/290-5114, <http://www.graphisoft.com>)—the current Mac CAD mar-

ket-share leader, with possibly as much as 50 percent of the market—says the departure of AutoDesk is an opportunity for his firm. Graphisoft's Mini-Cad 6 shipped several months ago in both Mac (see *Reviews*, March 1996) and Windows versions, and the company has been busy running demonstrations at mixed-platform design shops, particularly architectural firms, that refuse to junk their Macs in the wake of AutoCAD's disappearance.

Diehl also notes that as Power Macs speed up, CAD vendors will concentrate on automating existing drafting and modeling functions rather than mere addition of new features. Instead of requiring users to do interactive modeling in 3-D space, vendors are building considerable (and computationally intensive) "intelligence" into their software to create 3-D models automatically from the 2-D drafting documents most engineers and architects were trained to draw.

Laszlo Vespreni, director of product development at Graphisoft (415/737-8665, <http://www.graphisoft.com>), ArchiCAD's maker, agrees with Diehl's assessment. Both companies are planning software that will be able to generate realistic 3-D walkthroughs, including textured surfaces, for buildings specified mostly by traditional 2-D drafting CAD files. These applications will take advantage of the ultra high speed Power Macs expected to arrive later this year.

"The big question," Vespreni says, "is putting the new extra power to best use." Most CAD vendors for Macs and PCs used to add features each year that made their software more comparable to the CAD programs that ran on the fastest Unix workstations. Now, with the fastest Power

continues on page 46

publishing

Adobe's New Web Course

COMPANY LOOKS TO
INCREASE INTERACTIVITY
ONLINE AND IN PRINT
by Macworld Staff

Seeking to put its graphical imprint on the Web, Adobe Systems (415/961-4400, <http://www.adobe.com>) is developing technologies—including an interactive authoring tool and a Web version of Persuasion—to make the Web a richer publishing medium.

Web Graphics Go Hi-Fi A portable 2-D imaging standard, code-named Bravo, will give developers an API for displaying, printing, and managing high-res images, line art, and text for Web graphics.

Adobe claims Bravo will offer film-level quality, along with the ability to display, save, replay, and print 2-D text

used in Photoshop, Illustrator, Acrobat, and other Adobe products, Adobe's first new Bravo-based application, code-named Vertigo, is due next year. JavaSoft has announced its intent to use Bravo in a future implementation of Java.

If Bravo is the imaging model, Vertigo is the player. By bringing interactivity to the Bravo/Java team, Vertigo will let content providers combine graphics, sound, and video. It promises to be the first authoring tool to link sophisticated animation and interactivity with Bravo's high-res graphics capabilities.

Intranet Printing Last year printer companies began quietly adding Internet connectivity to their products. GCC Technologies unveiled Web-Admin for its Elite XL laser; Tektronix announced Phaser-Link for its color printers. Both ROM-based utilities let you choose, configure, and print to any Web-enhanced printer from a Web browser.

At the next level is Adobe's PrintMill, due by year's end. Unlike those utilities, Print-Mill installs on a Web server, making any network printer browser-accessible and eliminating the mishmash of drivers, Chooser setups, and Print Managers normally faced by multiplatform users.

Also, Adobe and Microsoft announced their intent to merge Type 1 PostScript with TrueType, creating a font format called OpenType for use on the Web and eventually in printers.

Presenting on the Web Finally, Adobe is developing a Web-based presentation tool. Code-named Web Presenter, it will let your presentations combine Web links, multimedia elements, photos, and illustrations.

Reported by BARBARA ASSADI, LINDA COMER, and SUZANNE COURTEAU.



and graphics—even on low-end Internet systems.

Although based on Adobe's PostScript, Bravo isn't tied to a specific font technology. It's expected to be delivered on various platforms, including Windows, Mac, and Solaris.

While Bravo is already

graphics

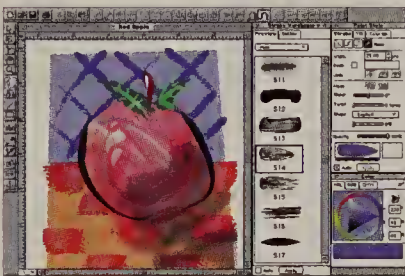
Natural Media Meets Vector Drawing

FIRST FRUIT OF FRACTAL AND RAY DREAM UNION

by Cathy Abes

Hot on the heels of their recent merger, Fractal Design (408/688-5300, <http://www.fractal.com>) and Ray Dream are introducing their first offspring: an object-oriented illustration program that lets you draw with fluid, paintlike effects.

With tools that parallel



Fractal Design Expression lets you create vector-based art with paint-style brushstrokes.

Painter's, Fractal Design Expression lets you create *strokes*—resolution-independent PostScript paths editable with standard drawing tools such as freehand, Bézier-pen, polyline, and B-spline tools. And the transparency feature lets you layer strokes to enhance the natural-media look.

Expression provides three kinds of strokes: Natural-Media strokes for creating paintlike effects; graphic elements (defined objects similar to clip art), and Multi-View strokes, which can combine the other two and be animated. More than 150 strokes and 200 graphic elements will ship with the program.

Expression supports multiple undos, layers, and pressure-sensitive tablets. It provides Mac and Windows file compatibility; reads and writes Adobe Illustrator and Corel-Draw files; and exports to Adobe Photoshop 2.5, TIFF, BMP, PCX, EPS, AVI, and QuickTime.

Due by fall, Expression will retail for \$449 (street price will be under \$300), \$199 for owners of Painter or Ray Dream Studio.

communications

The Race for Bandwidth

PHONE AND CABLE COMPANIES FIGHT AN UPHILL BATTLE

by Cary Lu

As demand for data bandwidth rises, the information super-highway's infrastructure is struggling to keep up. In an Internet-mad world where 28.8-Kbps modems and even 128-Kbps ISDN lines no longer seem fast, both telephone and cable companies are racing to offer higher-speed data connections. But despite all the hype you've been hearing, don't expect to find a fast, cheap

upstream from you to the phone company. Later versions of ADSL should run at up to 6 Mbps downstream and 640 Kbps upstream.

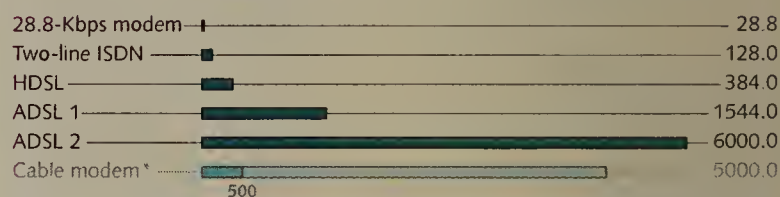
Phone versus Cable DSL will compete with the much-ballyhooed cable modem the cable TV companies want to offer for Internet connections.

A cable modem works very differently from a phone line. Instead of using a dedicated connection, all the cable subscribers in a region will share an Internet feed, occupying the equivalent of one cable television channel. Each data packet will contain a user ID, and your cable modem will pick out only those packets addressed to you.

The system resembles a local area network, and many proposed cable modems use an Ethernet-like protocol. A major drawback is that today's cables can carry only downstream data; for upstream data, you'll have to tie up a phone line, or the com-

Comparing Data-Transfer Speeds

Data speeds for present and forthcoming connections, in kilobits per second.



Incredible Shrinking Mouse

MOVABLE SHELL ADAPTS TO FIT YOUR HAND

We've seen them all—mice with ergonomically designed contours, extra buttons, and even one with ears. But now there's the Adjustable Mouse from Alps Electric (408/432-6000, <http://www.alpsusa.com>), with a movable shell that lets you alter its height and angle to fit small, medium, or large hands more comfortably. In addition to assigning single-button functions, you can also use the **chording** feature to assign any of nine preset operations to any combination of buttons. For example, you might set the left and center buttons to perform the Copy function when they're pressed in unison. Available now for \$40, the Adjustable Mouse comes with a six-foot cable and plugs into any ADB port.

—CATHY ABES



ARNOLD TIOSEJO

connection anytime soon.

Within the next couple of years, phone companies plan to offer several kinds of DSL (digital subscriber line) connections using the ordinary copper phone lines that already run into your home or office. You'll even be able to make a voice call and a DSL connection simultaneously on the same line. High-bit-rate DSL (HDSL) will run at 384 Kbps bidirectionally; asymmetric DSL (ADSL) will initially run at 1.544 Mbps *downstream* from the phone company to you, and 64 Kbps

panies will have to build a wireless radio network.

Bandwidth Not Enough Although cable companies talk about 500-Kbps to 5-Mbps or even faster connections, each cable modem subscriber will get only a fraction of that bandwidth. When fewer users are logged on, more bandwidth may be available.

But a faster final link doesn't always mean faster performance. Data speeds—whether for DSL service or for cable modem—describe only the last downstream link to your computer. Actual data

speed depends on many other factors, such as the servers and intermediate links.

DSL, like your phone service, lets you switch between different providers. But since cable modems—like cable television—work only with data fed by the local cable company, they can't offer that option. Cable companies can't provide true switched operation or upstream connection without replacing their present cables and electronics, a process that would take many years, if it is ever done.

US West, one of the regional Bell companies, says it will provide DSL service in some cities next year and that by 1998 DSL will be widely available, with rates starting at about \$35 per month for metered service. But because it needs high-quality, relatively short wire runs, DSL won't be available in all areas; it cannot reach as far as ISDN.

DSL Has the Edge Don't expect the cable TV companies to settle on a standard cable modem format in less than two years, because no one knows what will work with today's myriad cable systems. Therefore, many companies are likely to use interim formats that may quickly vanish once a standard finally emerges.

For now, the phone companies appear better situated, since they can offer limited DSL services without rebuilding their networks, though widespread use of DSL will require newer switching equipment. Cable companies face greater obstacles, because their systems aren't designed for two-way transfer, and data customers are much more demanding than TV viewers.

The 6-Mbps data rates later versions of ASDL promise should meet most users' needs for some years to come. Then we'll stop complaining about slow modems and find other bottlenecks to gripe about.

publishing

Portable Docs Get a New Lease on Life

THE NEW MISSION:

CONTENT ON THE NET

by James A. Martin

Send a formatted electronic document to anyone anywhere and save untold dollars in network resources and storage—even reduce global warming.

At least, that's how portable-document programs such as Adobe Acrobat (415/962-4400, <http://www.adobe.com>) were touted in the early 1990s—only to fade from lack of interest. But with the explosion of the Internet—and its cousin, the corporate intranet—there's finally a strong argument for portable-document technology.

Most vendors are poised to seize the Internet opportunity, but for some it might be too late. Here's where the four portable-document products stand today.

Acrobat Takes the Lead Thanks to marketing and name recognition, Acrobat has made it through relatively unscathed, and now seems to be the dominant portable-document technology for Web content developers.

The new version, 3.0, lets you view PDF files (Acrobat's native format) within Netscape Navigator 2.0 and Microsoft Internet Explorer. Previously, you had to download a PDF file from a Web site, then launch Acrobat to read it. With 3.0, you merely click on a PDF file to download it within the browser's

continues

Media WATCH

B Y J I M F E E L E Y

Real-Time Video Effects Two hardware developers, Truevision and Scitex Digital Video, have jumped into the waters of dual-stream video, promising real-time creation of dissolves, wipes, and other transition effects. Most single-stream video systems make you wait for such effects to render.

Truevision (408/562-4200, <http://www.truevision.com>) has stuck two hardware codec chips on its Targa 2000 RTX, letting the PCI card play two streams of component 720-by-486-pixel video. Avid, Adobe, and others plan to support the \$13,995 card.



The ImMix Sphere systems from Scitex Digital Video (410/783-0600, <http://www.scitexdv.com>) combine custom video-editing software with an outboard RISC-based processor unit that creates 720-by-486-pixel QuickTime Motion-JPEG images and effects in real time. Multiple Macs can share the video processor, which provides both component and serial digital-video I/O. Sphere systems cost \$13,995 to \$69,000.

Smart Move: "Dumb" Audio Apple's consumer audio ports and analog-to-digital converters limit the built-in audio-processing power of every Power Mac. So Korg (516/333-9100) built the euphoniously named 12121/O PCI Multi-Channel Audio Interface with Deck II. The \$1250 PCI card holds no DSP chips but combines analog and S/PDIF I/O ports with an eight-channel ADAT connector, providing the missing link between high-quality audio source and the Power Mac's audio-processing muscle.



The ADAT connector links your Mac to tape decks and peripherals that use the ubiquitous audio port developed by Alesis. As you've probably guessed by the name, Korg bundles a copy of Macromedia's Deck II audio-editing software. Optional A/D and D/A hardware interfaces are available.

LightWave Coming to Mac LightWave 3D, one of the most popular 3-D packages on any platform, will finally be available for the Power Mac in the third quarter of this year. NewTek (913/228-8000, <http://www.newtek.com>) says the \$1495 program will support

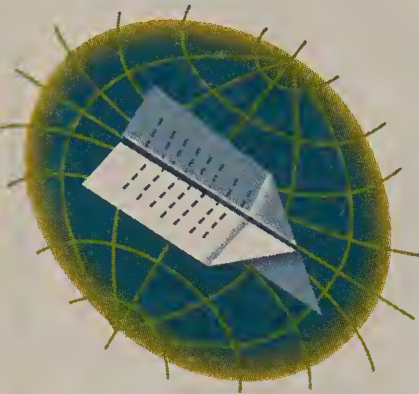


QuickDraw 3D's interactive renderer, and will be feature-equivalent with upcoming 5.0 versions of LightWave running on PCs and Silicon Graphics workstations.

DOUG ROSS

window, one page at a time.

Acrobat 3.0 lets you add interactive data fields to PDF documents. Developers of Web sites can capture data from users and then archive the completed form as a PDF file, which will produce better output than is possible in HTML format.



An OCR plug-in lets you scan documents and graphics to generate PDF files for archiving or distributing. At press time, pricing for Acrobat 3.0, due to ship in August, wasn't final.

Previously existing features include Catalog, which creates search indexes to find content from a repository of PDF files, and hyperlinking tools that allow annotation and links to other documents and Web sites. And in an effort to reduce the large file sizes of previous versions, 3.0 will use compressed Type 1 fonts and LZW file compression.

Losing Ground Once considered a strong contender, Common Ground from Common Ground Software (formerly known as No Hands Software, 415/802-5800) has seen its edge slip away. Version 2.0 is finally set to ship this June for \$189, nearly two years after it was announced. In the interim, many of 2.0's enhancements—like support for Netscape Navigator and Internet Explorer—have been added to other programs, such as Acrobat and Tumbleweed Software's (415/363-7022, <http://www.twcorp.com>) Envoy.

Also like Envoy, Common Ground 2.0 will incorporate

Bitstream's TrueDoc font-replication technology. Embedding TrueDoc font outlines in a document creates smaller files and provides unlimited magnification and output without loss of resolution, the company says.

Still a Contender Of all the portable-document programs, Envoy has traveled the most twisted route. Developed by Tumbleweed Software, it was licensed to WordPerfect. When Novell acquired WordPerfect, it incorporated Envoy into its suite of office software—which it then sold to Corel. Today, Corel is licensing Envoy with its Corel Office suite for Windows and with both versions of WordPerfect.

Meanwhile, Tumbleweed sells Envoy for \$79 exclusively from its Web site. Envoy is also part of Tumbleweed's \$199 Publisher package, which batch-converts PostScript files into Envoy format. And it's in the \$695 Publishing Essentials, which offers search-index tools like Acrobat Catalog's, as well as batch conversion of PostScript files.

Envoy 7.0's viewer is more robust than its competitors', letting you easily create indexed documents with annotations, tables of contents, links to other Envoy documents and to Web sites. The program's ability to embed Envoy files in many applications, including some E-mail packages, and its fairly compact file sizes have earned it a loyal following.

The End of the Line The least promising of all, Farallon Computing's (510/814-5100, <http://www.farallon.com>) \$99 Replica is still in its first version, and there are no upgrade plans. Farallon is positioning it for CD-ROM and other developers, but considering its competitors' stronger CD-ROM production features, it's hard to see any future for Replica.

Internet WATCH

BY CAMERON CROTTY

Mac Java Pot Bubbles Java remains on everyone's lips in and out of the coffee shops on the Rue du Macintosh. The biggest news about the piping-hot object-oriented programming environment was Apple's (408/996-1010, <http://www.info.apple.com>) recent announcement that it would license Java from Sun Microsystems and make it an integral part of both the Macintosh and the Newton operating systems.

Meanwhile, PowerProduction Software (310/937-4411, <http://www.powerproduction.com>) announced WebBurst, a graphical Java authoring tool, expected to ship by June for \$299. Users can import images or animations into WebBurst and graphically assign animation paths and hot links. WebBurst also has tools for interface construction—you can design buttons and text fields, and then program their behavior. When you're done, WebBurst creates a folder that contains the Java code and supporting files.

Moving into the server domain, Quarterdeck (310/309-3700, <http://www.quarterdeck.com>) has announced a partnership with Natural Intelligence (617/876-4876, <http://www.natural.com>), the company that developed the Roaster Java development tool. Natural Intelligence is developing a Java virtual machine plug-in for Quarterdeck's WebStar Web server. The companies expect to deliver products incorporating each other's technologies by the end of summer.



Java applets grow graphically when you use WebBurst, a visual application builder.

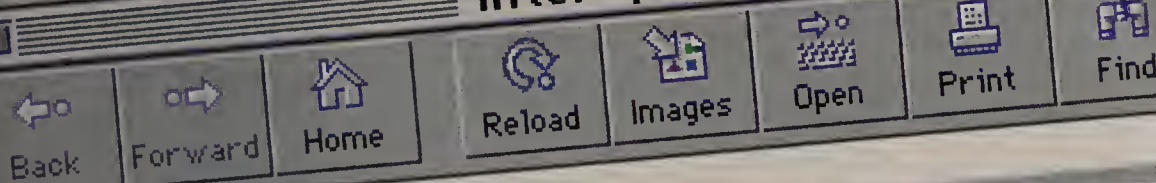
Browsers Do the Walking Now that you're online, software is on the way for cruising and downloading all those Web sites that you don't have time to follow. They're called offline browsers, and the first Mac candidate, WebBuddy, is expected to ship in July for \$49 from DataViz (203/268-0300, <http://www.dataviz.com>). When you find a site you want to read, but don't want to wait while it downloads, a click on WebBuddy's Page To Go or Site To Go button will schedule a time to download one or more pages for your later perusal. Other companies are working on similar utilities, including FreeLoader (202/686-0660, <http://www.freeloader.com>), whose eponymous FreeLoader software watches sites you've subscribed to. When FreeLoader is available for the Mac (not until this fall), it will include a screen saver to alert you to new information.

Blast Your Web Page Into The Next Dimension!

SPECULAR 3D WEB WORKSHOP™

Before Specular 3D Web Workshop

After Specular 3D Web Workshop



Go to: <http://www.specular.com>

No Need to Know HTML!

Includes:
Adobe PageMill™
Free Internet Access!

Specular 3D Web Workshop

A complete set of Web design graphics tools, plus hundreds of customizable WebHands™!

NEW
COOL



Specular

Home

Links

Forward

SPECULAR

HOME

LINKS

FORWARD

GO!

HOT



Specular 3D Web Workshop is the complete solution for creating high-impact Web pages. Specular 3D Web Workshop makes it easy to integrate sophisticated graphics, such as 3D animations, into your Web pages with drag-and-drop simplicity. Whether you are a beginning Web enthusiast or a seasoned Web Master, 3D Web Workshop has everything you need to quickly create a stunning page that will draw in Web surfers and keep them coming back!

Specular

The 3D Graphics Company

Innovative Specular WebHands™ make creating custom Web pages fast and easy. Drag-and-drop professionally designed Web graphics into Adobe PageMill™ (included FREE!) for instant page creation, or edit text, lighting, color, perspective and more. Animated WebHands work out of the box with any browser, or you can tune them for QuickTime or Shockwave™ plug-ins. So blast your Web page into the next dimension with Specular 3D Web Workshop!

ONLY \$249
Call MacMall at 1-800-222-2808

30 Day Money-Back Guarantee!

For more information, call Specular at 1-800-433-SPEC
Check out our Web site for a demo: www.specular.com

Specular 3D Web Workshop, Specular WebHands and the Specular logo are trademarks of Specular International, Ltd. The Netscape Navigator interface and the Netscape logo are trademarks of Netscape Communications Corp. All other trademarks are copyright by their respective owners.

Circle 41 on reader service card



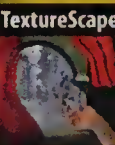
New!



'92 & '95 Eddy Award
Macworld World Class



MacUser 4-Mice
MacWEEK 4-Diamonds



1994 Eddy Award
NewMedia Awesome



MacWEEK 4-Diamonds
MacUser UK 4-Mice



Sneak
PEEK

New Tools for Content Creation

A FIRST LOOK AT QUARKIMMEDIA, NAVIGATOR GOLD, AND CORELDRAW

Creating sophisticated imagery

has always been a priority for Macintosh users, but the recent Web publishing explosion has upped the ante. Here's a quick take on Quark's XTension for Web and multimedia production, Netscape's HTML editor, and Corel's all-purpose graphics package.

Immedia Makes
QuarkXPress
Interactive

by Barbara Assadi

Everyone's jumping on the Web publishing bandwagon, many with tools that create HTML documents based on existing documents. But Quark (303/894-8888, <http://www.quark.com>) is following a different path. The company's first foray into cyberterritory is the \$995 QuarkImmedia, a multimedia- and Internet-authoring and viewing extension to QuarkXPress that should ship this summer. I spent a day with a beta copy of QuarkImmedia and was impressed by the depth of its features.

Layout Comes Alive

Immedia has two parts: the design (authoring) tool and the viewer. With the design tool you can add QuickTime movies, sounds, buttons, and animations to your XPress layouts—for use on the Web, CDs, or internal corporate networks. In fact, you can transform your layout into a presentation that is truly interactive, not merely a gussied-up layout.

The feature set is rich and complex, but not overwhelming—I was able to create a simple project in just a few hours. As an extension to QuarkXPress, Immedia approaches multimedia projects with a page-based metaphor that XPress users will adapt to easily. The look and feel is vintage XPress, with the addition of tabbed windows that control the objects (text boxes,

While those familiar with XPress should have no trouble adapting to Immedia, others may find having to first learn (and buy) XPress a bit intimidating. Immedia will require XPress 3.2 or later. On the plus side, Immedia comes with superb, easy-to-follow documentation, with a tutorial that walks you through the creation of a fairly complex project. A separate booklet includes an overview of everything you need to consider when planning a project.

What's missing is an effective way to get a bird's-eye view of your project—such as in Macromedia's flowchart in Authorware or spreadsheet in Director—but since Immedia sports the same open architecture as XPress that lets other companies write plug-ins (XTensions) to Immedia, I hope a plug-in developer will rise to the occasion.

This product should be a hit with publishers who have archives of interesting XPress pages, since they will now be able to turn those pages into interactive projects. Publishers will also be able to create dual-purpose pieces (for print and on-line use, for example).

Beyond HTML

Quark has been criticized for not supporting HTML in Immedia. But the company's goal has been to create a tool that allows users to produce projects that look better than what the admittedly primitive HTML standard can deliver. Based on the beta version, Im-

media seems to come through on that goal.

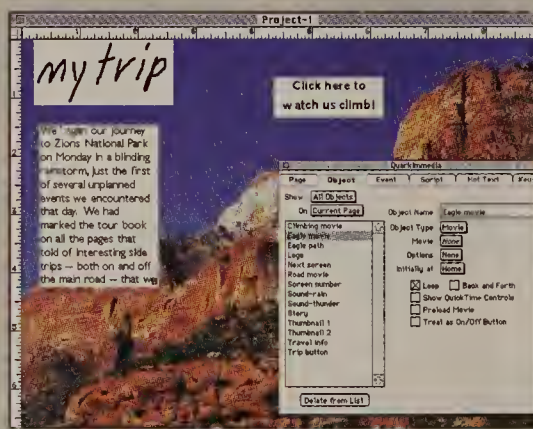
What remains to be seen is how widely used Immedia will become, and in what media. I suspect it may compete more with authoring tools like Macromedia Director and Gold Disk Astound than with Web publishing tools like Adobe PageMill or Adobe Acrobat.

Navigator Gold
3.0 Does HTML

by Geoff Duncan

Following recent practice, Netscape Communications (415/937-2555, <http://www.netscape.com>) has been making preview releases of both Netscape Navigator 3.0 and the "premium" Netscape Navigator Gold 3.0 publicly available. Navigator 3.0 is a RAM-hungry update to Netscape's popular Web browser with a revised look and enhanced media, chatting, VRML, and Java support. Navigator Gold 3.0 will offer the same Web browser, and enhancements plus built-in WYSIWYG HTML authoring tools for creating Web pages. With Navigator Gold, Netscape has a good start on a combined browser and authoring program that could prove useful for casual and first-time Web authors.

More Than Meets the Eye Navigator Gold's HTML editor resembles Microsoft's Office applications, which (of course) resemble Microsoft Windows. The basic idea is to enter or import text, then set it



With well-designed and powerful tools, QuarkImmedia lets you create interactive QuarkXPress documents with sound, motion, and buttons.

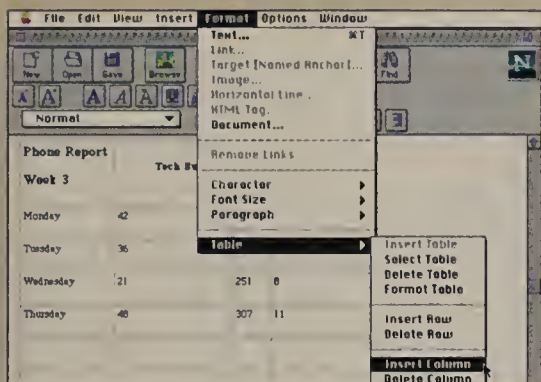
picture boxes, lines, or text strings), user events (such as clicking on a certain spot), and actions (more than 100 scriptable actions, such as those that start or stop a QuickTime movie). An Engage command in the design tool makes it easy to test and preview projects as you develop them. Unfortunately, while XPress supports Apple-events scripting, Immedia currently does not.

up to be viewed on the Web. Netscape Gold's HTML editor offers tool bars for file operations, character attributes, and document formatting, along with menu commands and dialogs to create and modify Web documents without resorting to HTML coding.

Some of the tool-bar items are genuinely useful, such as the style pop-up and list-making buttons; the (often multitabbed) dialogs offer surprisingly complete control of the page, including images, character and paragraph styles, and links. For many users, the most significant benefit of Navigator Gold's HTML editor will be its tools for creating and editing HTML tables, which are notoriously difficult to code by hand. Those with experience creating tables in word processing programs will find Navigator Gold's table editor full-featured and easy to use.

Near-WYSIWYG Editing

Those unfamiliar with (or intimidated by) HTML tags will immediately understand the appeal of Navigator Gold's nearly WYSIWYG HTML-editing features, and though the editor's display isn't the same as a browser, it does give a good approximation. But because it makes no effort to distinguish Netscape's non-standard HTML extensions from "standard" HTML, it's difficult to determine whether a feature will translate well to the wide range of Web browsers in use. This means that making Web pages that work with a variety of browsers will still require knowledge of HTML tags. Also, Navigator Gold's HTML editor transparently converts common international



If you're used to making tables in a word processor, you'll feel right at home with Navigator Gold's table editor.

al characters to HTML entities, but it doesn't convert common desktop publishing characters, such as em dashes and curly quotes, into cross-platform equivalents.

Needs and Speed

Navigator Gold's biggest problems are performance (it's possible to type faster than the editor can handle, even on a high-end Power Mac), and interface gaffes (setting up a link requires manually typing or pasting in an URL, since the HTML editor and its dialogs don't yet support drag and drop from other applications or from Netscape windows). Still, Navigator Gold is a promising start that might give PageMill 2.0 serious competition, provided it can run in a reasonable amount of RAM.

Can CorelDraw Challenge the Pros?

by Mike Heck

For many years, CorelDraw (613/728-8200, <http://www.corel.com>) has owned the Windows illustration market, but Mac users are a different breed. The long-overdue Mac version faces stiff opposition from pro-

fessional users of Macromedia FreeHand and Adobe Illustrator, who'll need strong convincing to even consider a switch.

After evaluating a beta of CorelDraw 6 for the Power Mac, I would expect novice Mac artists to seriously consider this product because it's easier to understand and use than its main competition, Illustrator and FreeHand. Experienced illustrators should also appreciate its professional-level capabilities, such as color matching, and its cross-platform compatibility is a plus for those who work with both Macs and PCs.

CorelDraw 6 is a great value because with it you get not only the flagship draw program, but also a procedural texture generator (CorelTexture), a 3-D modeler (CorelDream), and a bitmap editor (CorelImpressionist).

CorelDraw logically groups functions, such as special effects, within roll-up palettes so they're easy to find. Illustration tools—polygon, spiral, knife, and eraser—match the capabilities of similar functions included with the latest releases of Illustrator and FreeHand. Yet CorelDraw's bitmap fills and infinitely variable texture fills give you far more artistic freedom. For example, you might fill an object with a textured paper pattern, with options to change the paper's color and fibers any time during the design process.

Even with its 100 editable textures, CorelTexture isn't as full-featured as Spccular International's TextureScape, since you can't create objects and apply textures to them in the same module. Even so, CorelTexture is worthwhile because it provides a wider

range of controls than TextureScape, which results in more-realistic-looking textures. You can combine up to seven surface layers to build a texture, then adjust settings such as color, lighting, grain angles, and how the layers interact.

Although CorelImpressionist has some unique features—such as the ability to define the dry-out speed and wetness for the artistic brush effects, and to directly edit text after it's placed within an image—it won't challenge Photoshop's stranglehold on the image-editing market or Fractal Design Painter's natural-media-effects domain.

Finally, CorelDream 3D is just a Corel-specific version of



CorelDraw 6 clusters related tools in roll-up palettes, which are more intuitive than the toolboxes in either FreeHand or Illustrator. And, true to the Macintosh interface, CorelDraw supports Apple Guide help.

the popular spline-based modeler Ray Dream Designer (now owned by Fractal Design).

CorelDraw, like any illustration package, reflects a working style more than a right or wrong software-design approach. Macintosh artists should give Corel credit for including a long list of professional capabilities, like 32-bit precision and PostScript output options. About the only missing piece is high-fidelity (hexachronic) color matching, which Corel is planning for a fall release in CorelDraw 7.

CorelDraw 6 for the Power Mac is planned for a July release at a list price of \$695.

systems

Truly Personal Computers

SPECIAL-PURPOSE PDAS
WILL HANDLE INTERNET,
PHONE, AND E-MAIL

by Galen Gruman

For years Apple and others have been promising computers that are as personal as Walkmans. In recent months, the promise has been for Internet appliances—stripped-down PCs, costing less than \$500, to surf the Web. Apple's Pippin technology offers a similar promise, but will be more expensive—about \$650 (see "Bandai's Pippin Arrives," *News*, May 1996). Now a new company, composed of engineers from Oracle, the database giant, has a new promise: the Interactive Digital Appliance. Diba (415/596-1177, <http://www.diba.com>) promises the first appliances by the end of the year, and says they will include a device that connects to the Internet (shown here)

and can handle both phone and E-mail. The company says the systems will cost between \$300 and \$400 each.

Unlike a computer, the Interactive Digital Appliance will have no keyboard—Diba Internet will use an infrared remote to control it, while Diba Mail will use a standard phone handset. While they're not Mac-based, the Diba devices—essentially special-purpose PDAs—will use some Mac technology. Most prominent is Quark's plan to port its QuarkImmedia multimedia



Diba Internet surfs the Web
with an infrared remote control
instead of a keyboard.

playback software to some Diba devices, for use in displaying interactive Web pages and CD-ROM data.

"MAC CAD DOES FINE"

continued from page 39

Macs comparable in throughput with last year's Silicon Graphics or Sun workstations, CAD software for the Mac is entering a new experimental phase.

Bentley Systems (610/458-5000, <http://www.bentley.com>), developer of the top-of-the-line cross-platform system MicroStation V5, has sped up its Mac efforts lately to avoid "Mac lag" on Windows titles. The company's new architectural 3-D modeler, TriForma, was recently released on multiple platforms simultaneously.

Yoav Etel, president of Bentley, notes, "People design every aspect of buildings with our software, and the buildings will last 50 to 100 years. Someday people will have to modify those designs, in an era where only software old-timers even remember what the Mac OS or Windows 95 were. We have to be committed to fully supporting every viable platform, now and in the future."

Gone, but Not Forgotten

Ashlar (408/746-1800, <http://www.ashlar.com>) product manager Jesse Lewis notes that

Ashlar dropped the price of its longtime flagship Mac favorite, Vellum, from \$2995 to \$1495; introduced a lower-cost (\$695) upgrade program for Claris CAD refugees; and is aggressively working on converting AutoCAD sites.

In fact, now that AutoDesk is no longer a competitor, Ashlar is licensing some of its interface and geometric transformation technology to AutoDesk for inclusion in future PC AutoCAD versions. Ironically, though, AutoDesk remains a powerful but ghostly presence in the Mac market, as the ability to read and write AutoCAD file formats is a must-have feature for any CAD software.

It's never good news when an important vendor stops Mac support, but the special circumstances of the Mac CAD market seem to mean that AutoCAD's absence is not particularly bad news, either. As Ashlar's Lewis points out, "If your program can read and write current and earlier AutoCAD file formats, and you can compete with AutoCAD on features and beat it at ease of use, you can have a very good time in business as a Mac CAD vendor."

System 7.5.3's Speed Advantage

APPLE TAKES BETTER ADVANTAGE OF THE POWERPC

Apple's recent System 7.5.3 update delivers a substantial performance boost over the previous system software. A prototype of the Umax SuperMac S900, for example, gained about 18 percent in overall performance, as can be seen in the performance figures we obtained, which are shown below. Other vendors' machines experienced similar improvements, particularly in the CPU-intensive and

FPU-intensive tasks (as demonstrated by the Umax unit).

The speed increases result in part from a larger percentage of the new system code having been rewritten as native for PowerPC. Apple also made a number of other improvements, including changes to QuickDraw routines that speed up QuickDraw-related functions.—MARK HURLLOW



Best result in test. Longer bars are better. Results are times as fast as a Centris 650 (Centris 650 = 1.0).
For test details, see "The New Speed Champs," July 1996 issue.—Macworld Lab testing supervised by Mark Hurlow

Umax SuperMac S900 (prototype)

Running System 7.5.3

Running System 7.5.2

Overall Score

6.0
5.1

Shows typical performance in a mixed-use environment.

CPU-Intensive

6.3
4.9

Shows performance for most business and personal tasks.

FPU-Intensive

8.0
7.5

Shows performance for analytical, 3-D, and other specialized uses.

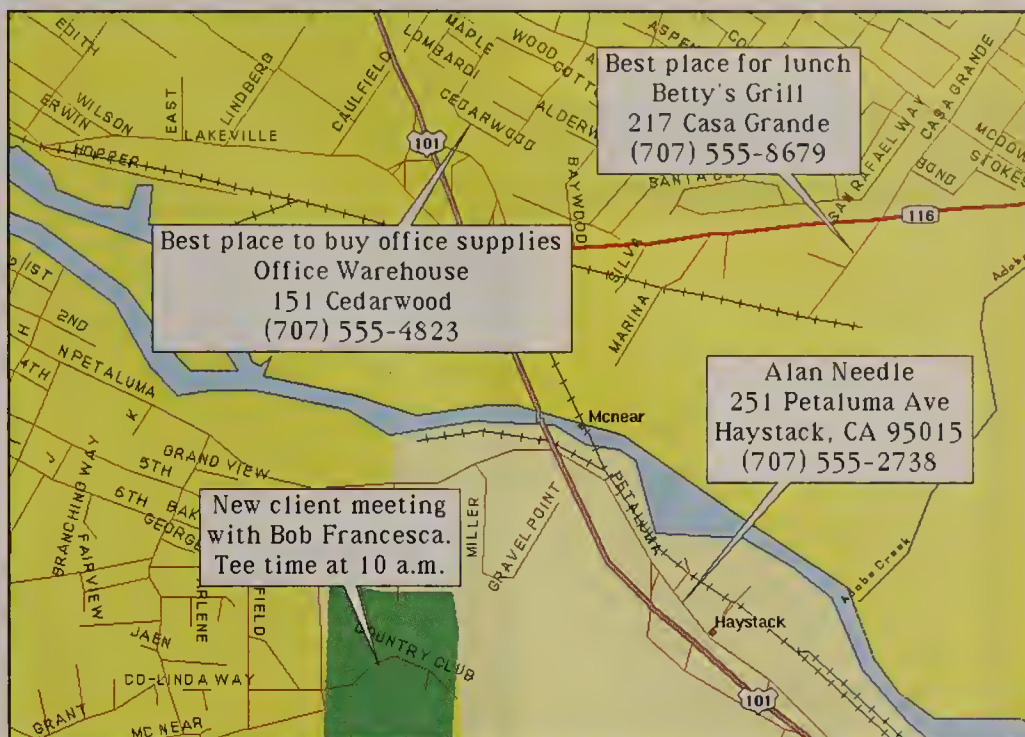
Disk-Intensive

2.5
2.4

Shows performance of the data-transfer capability, which affects all users.

Find A. Needle in Haystack, CA...

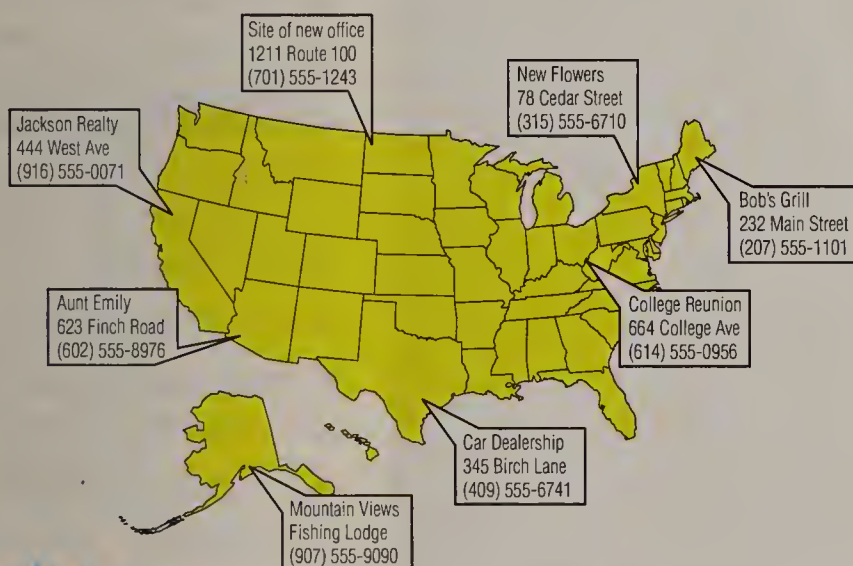
Find the customers, suppliers, old friends or golf courses you're looking for. Street Atlas USA® 3.0 is America's best-selling mapping software. Use it with Phone Search USA™ 2.0, our digital phone directory, to look up almost anyone and anywhere in the USA — and locate them on detailed maps.



Just select the listings you want...then locate them on detailed maps!

- Find potential clients nearby—or nationwide
- Locate suppliers by type and place—from architects in Atlanta to software stores in San Francisco
- Locate hotels, restaurants and meeting sites for business trips
- Make maps to client locations

...or almost anyone and anywhere in the USA!



Available from your local software retailer,
your favorite software catalogs
or direct from DeLorme at 1-800-452-5931, ext. 215.

New Version!

Street Atlas USA 3.0

- Seamless street maps of the entire USA on one CD-ROM
- Incredible map detail
- Search by place name, ZIP Code—even street address
- Customize maps with notes and symbols
- Print detailed, useful maps



Phone Search USA 2.0

- Over 80 million business and residential listings on three CD-ROMs
- Search by name, phone number or business type
- Search the whole country or just a state, city or ZIP Code
- Export unlimited listings



DELORME

Check out our Web site! www.delorme.com

Circle 86 on reader service card

New for Macintosh!

What *was* on your PowerBook?

Amazing where you'll find PowerBooks these days. On the road. In the air. At the beach. Everywhere.

Only thing is, they're traveling around with important files that don't exist anywhere else. And every disaster that can happen to a Mac in the office is multiplied when you take a PowerBook into the world. Like cocktails in the keyboard. Or when it gets hijacked at the airport. Voltage spikes. Gorilla bellhops. The unfortunate farewell when you leave it behind in a cab.

With Retrospect Remote® 3.0, PowerBooks get the protection they need. It backs up PowerBooks automatically when they

connect to the network. So even when your PowerBook's not connected, you still have peace of mind.

Retrospect Remote also backs up each Mac on your network in priority order. And now, with the new Remote Pack for Windows 95 & NT, it takes care of PC notebooks and laptops. Even PCs that stay put.

We wrote the book on PowerBook backup. Call us at 800-982-9983 and we'll send it to you. Because sometimes using a PowerBook isn't a day at the beach. But with Retrospect, you'll always bounce back.



It's unanimous. MacWeek says Retrospect is "the best of the breed." MacWorld writes "Retrospect leaves the competition in the dust." And MacUser reports "no other backup utility can match its breadth or depth."



If you're not on a network, we still have you covered with our single user version, Retrospect® 3.0.



To go forward, you must back up.®

©1996 Retrospect Remote and Retrospect are registered trademarks of Dantz Development Corporation. All other trademarks are property of their respective holders. Dantz Development Corporation, 4 Orinda Way, Building C, Orinda, CA 94563. Phone: 510.253.3000. Fax: 510.253.9099. Internet: info@dantz.com, upgrades@dantz.com, www.dantz.com

Circle 26 on reader service card

New Products

THE LATEST MACINTOSH RELEASES

BUSINESS

Adding HTML to Business

If you want to publish your business's data on the Web, but your authoring skills run more to Persuasion than to PageMill, some business-oriented software tools are adding Web-publishing features.

One of the latest is RadMedia's (415/617-9430, <http://www.radmedia.com>) \$495 PowerMedia multimedia authoring software, which features simple tools and templates designed for business users creating interactive hyperlinked presentations. PowerMedia presentations can be viewed with RadMedia's run-time software (also available as a Netscape Navigator plug-in), or they can be published as HTML documents.

COMMUNICATIONS

Cross-Platform File Transfer

Macintosh users trying to transfer files to and from Windows machines have an alternative to faxes, E-mail, and overnight delivery: the \$30 GlobalTransfer from Global Village (408/523-1000, <http://www.globalvillage.com>).

Based on the Zmodem file-transfer protocol and compatible with most 14.4-Kbps or faster modems, GlobalTransfer lets you send documents cross-platform using a simple point-and-click interface. It eliminates the hassles of fax software and the file-encoding and compression requirements of E-mail.

EDUCATION

Colorful Crafts on an Ink-Jet

With its everything-you-need-is-in-the-box project kits, PrintPaks (503/295-6564, <http://www.printpaks.com>) lets you go beyond the ordinary with your ink-jet printer. PrintPaks Magnet

Kit, Pop-Up Greeting Card Kit, Personalized Pinwheel Kit, and Window Art Kit each include a CD with step-by-step instructions, high-quality papers and components, and supplied art—although you can use your own. You can find PrintPaks for about \$20 each in places like Target, Toys 'R' Us, and craft stores, in addition to regular computer chains. Refills are available from PrintPaks for \$10.

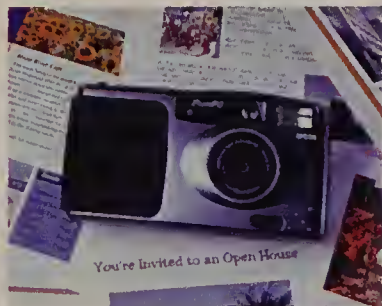
GRAPHICS

Better Art through Chemistry

Despite the many collections of background images to be found on CD-ROM these days, here's one you probably haven't seen. PhotoGear Texturework from Image Club (403/262-8008, <http://www.imageclub.com>) features 30 irregularly textured high-resolution images, all created by mixing acrylic paints with ordinary soap. It is available now for \$59.

Low-Cost Digital Photography

As image quality improves, the cost of digital cameras continues to drop, and Epson's (310/782-0770, <http://www.epson.com>) PhotoPC for Mac is no exception. With the look and feel of a traditional 35mm camera, the PhotoPC weighs less than a pound, provides 24-bit color in up to 640-by-480-pixel resolution, and compresses images in JPEG format. The base unit's 1MB of flash memory stores up to 16 high-resolution



Epson's PhotoPC for Mac

images or at least 32 standard images, and is expandable to 5MB for up to 160 standard-resolution images. The PhotoPC accepts any 37mm video camcorder lens or filter and has auto- and forced-flash modes. Due this summer, the PhotoPC lists for \$599.

Designs from Ancient Times

One of the most influential books on ornamental design is now available on CD-ROM from Direct Imagination (818/793-8387). Owen Jones's *Grammar of Ornament*, first published in 1856, in this version contains



Grammar of Ornament

more than 2300 royalty-free patterns from 20 cultures and epochs throughout history, including Egyptian, Greek, medieval, Renaissance, Byzantine, Persian, and Chinese. Also included is a collection of 160 patterns from the book, redrawn in PostScript, that can be scaled to any size without loss of quality. Acrobat browsers let you easily navigate through the *Grammar* text and the color plates. The Professional Artists' Edition is \$199; the Compact Edition, \$99; and the Art Resource Edition, \$59.

Black-and-White Hits the Spot

Color may be hot, but sometimes black-and-white says it all. If you're looking for striking illustrations in shades of gray, now there's a stock image agency for you. Spots on the Spot (914/426-5759) lets designers tap into an electronic library of more than 6000 images by 80 professional illustrators, with cost of usage ranging from \$65 to \$125 per image. It also has an automated 24-hour fax-on-demand network. Expect to see a CD-ROM version by the fall.

MULTIMEDIA

ElectricImage Broadcasts Effects

Artists who create 3-D graphics for television broadcasts, CD-ROM titles, and other media can now take advantage of the same software tools used to produce special effects for films such as *Terminator 2*. The \$2495 ElectricImage Broadcast from ElectricImage (818/577-1627, <http://www.electricimage.com>) contains most features found in the \$7495 ElectricImage Animation System, except that rendering is limited to broadcast resolutions of up to PAL (768 by 576 pixels).

Real-Time Digital Video

In the jump-cut world of digital video, click-and-wait leaves you dead in the water. With Truevision's (408/562-4200, <http://www.truevision.com>) \$4995 Targa 2000 RTX hardware-based editing package, video artists can process digital-video effects, such as wipes, fades, and dissolves, in real time.

NETWORKING

Connect 10BaseT to 100BaseT

Migrating to 100BaseT? Asanté (408/435-8388, <http://www.asante.com>) can help with its \$7499 71010xp 10/100 Switch, an eight-port 10BaseT/100BaseT workgroup switch that should be shipping by the time you read this; it includes two expansion (TX or FX) ports. Asanté has also released the \$2495 ReadySwitch 5104 FX, a 10BaseT switched hub with a 100BaseFX fiber-optic link.

Dayna Communications (801/269-7200, <http://www.dayna.com>) has released a single-port bridge, the \$499 BlueStreak Fast EtherPrint 10/100, which connects 10BaseT-only devices (such as most network printers) to a 100BaseT network.

Full DNS for Mac

Iceland-based Men & Mice (354/525-4938, <http://www.menandmice.com>) has released QuickDNS Pro continues

New Products

1.1, a \$295 domain-name server that offers primary, secondary, and recursive name service.

ONLINE

3-D on the Web

Targeted at Web-page designers who want to build 3-D imagery, animation, and graphic elements into their Web sites, Specular's (413/253-3100, <http://www.specular.com>) 3-D Web Workshop (price not yet announced) is a 3-D Web-page design and layout package composed of Specular TextureScape, Specular LogoMotion, Adobe PageMill, and Specular WebHands, a collection of customizable graphic elements for Web-page design.

New Life for Old Macs

Don't throw out that old Mac LC II—turn it into an Internet router instead. Vicom (800/818-4266, <http://www.vicomtech.com>) has released the Vicom Internet Gateway for the Small Office, a software TCP/IP router that works on any Mac with a 68020 or better processor running System 7. Multiple users on Ethernet or AppleTalk LANs can access the Internet simultaneously through a single SLIP or PPP account via modem or ISDN. A 2-user version is \$149; \$50 for 1 additional user; \$300 for 10 users; \$500 for 20; ISDN module \$149.

Measure Your Bandwidth

Are you finding that your T1 line isn't quite as fast as you expected? Neon Software's (510/283-9771, <http://www.neon.com>) \$139 Cybergauge is an SNMP management tool for determining your Internet requirements and learning whether your bandwidth matches up. It works on all IP/SNMP-capable devices—including routers and hubs—to measure bandwidth use, pinpointing bottlenecks and misconfigurations to help you improve efficiency. Special pricing is available for current Neon Software customers.

PRINTING

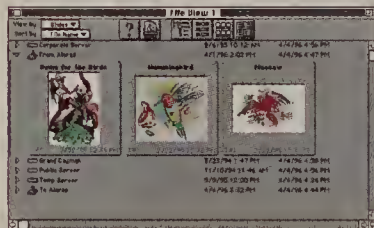
The Right Size

Trying to get your output to fit on your printer's pages? Try Great Proportions, a \$27 electronic version of the venerable proportion wheel from SGE Software (516/424-7925).

PUBLISHING

Remote Image Management

Alaras (919/544-1228) has added Client and Remote modules to its image-management and workflow-automation system. Alaras Tropix Client (prices range from \$90 for 4 users to \$5990 for 25 users) adds password-protected network accessibility to the Server module. With the \$290 Alaras Tropix Remote, customers of service bureaus can dial in via high-speed modems, ISDN, or T1 connections to a centralized password-protected image database. To offer high-speed remote access, the service bureau needs



Alaras's Tropix

the \$15,000 Alaras Server Pro module, which will also be able to accommodate future modules such as Time Billing and Auto Changer (for jukebox support).

SCIENCE/ENGINEERING

Word Does Math

If you're working on a technical report and tired of switching from Microsoft Word 6.0 to Wolfram's Mathematica for your calculations and equation generation, look to Mathematica Link for Microsoft Word, a \$129 utility from Wolfram Research (217/398-0700, <http://www.wolfram.com>) that lets you access Mathematica directly from within Word 6.0.

STORAGE

MO Drive Twice as Fast

Current magneto-optical drives handle data in a two-pass process: the drive erases the previous data, spins around again, and then writes data. Nikon's (415/508-4674) new Beluga 5.25-inch, 2.6GB, MO drive (\$2699 for an internal model) skips the erasure step and overwrites previous data, much in the same way a tape system or hard drive does.



Nikon's Beluga

The Beluga drive can read data that's already been written onto current 650MB and 1.3GB MO media from other MO drives. However, once the media has been used in a Beluga drive, the media cannot then be read by non-Beluga drives. Beluga media will cost about \$160 for a 2.6GB cartridge.

Tape and RAID Make Room

Many of us are just reaching a gigabyte of storage on our desktop machines, but in the worlds of networked backup and digital video, 1GB is just the beginning.

Procom Technology's (714/852-1000, <http://www.procom.com>) new \$12,995 LDT280G digital linear tape subsystem provides up to 280GB of compressed storage for extensive networking environments. It accommodates seven DLT drives, and Procom estimates that the library's robotics can load and unload tapes in about 29 seconds and locate data in about 68 seconds once a tape has been loaded.

TITLES

New Angles on the Net

While much of the hoopla about the Internet centers on how to browse or publish your Web pages, two

books explore this phenomenon from fresh angles.

• *Digital Money*, a \$25 book by Daniel Lynch and Leslie Lundquist (John Wiley & Sons, 212/850-6000, <http://www.wiley.com/compbooks>), explores the processes and issues behind online commerce.

• *Bandits on the Information Superhighway*, an \$18 book by Dan Barrett (O'Reilly & Associates, 707/829-0515), is a course in information-superhighway street smarts, dealing with the hype and realities of online pornography, crime, commerce, pranks, junk mail, privacy, and relationships.

Preparing Web Graphics

Covering the visual side of the Internet, *Designing Web Graphics*, by Lynda Weinman, is a \$50 book with CD-ROM published by New Riders (317/581-3500, <http://www.mcp.com/newriders/>) that uses step-by-step tutorials and real-world examples to show how you prepare effective graphics for the Web.

UTILITIES/TOOLS

More Favorite Shortcuts

CE Software (515/221-1801, <http://www.cesoft.com>) has released version 3.5 of QuickKeys, with a Power Mac version to come in August. QuickKeys 3.5 (\$119) offers new ways to create shortcuts within or across applications—including using stationary tool bars and floating palettes. Version 3.5 includes a batch processor for performing a series of QuickKeys shortcuts on multiple documents, and promises to simplify creating shortcut sequences.

VENDORS: TO HAVE YOUR PRODUCTS CONSIDERED FOR PUBLICATION IN NEW PRODUCTS, SEND A PRESS RELEASE WITH PRODUCT DESCRIPTION, PRICE, AVAILABILITY, AND CONTACT INFORMATION FOR READERS, PLUS OPTIONAL PHOTO OR SCREEN SHOT, TO NEW PRODUCTS EDITOR, MACWORLD, 501 SECOND ST., SAN FRANCISCO, CA 94107; NEW_PRODUCTS@MACWORLD.COM.

Your ability to perform wonders just got a boost. Now the leading illustration and page design program for Macintosh® offers the highest quality TIFF and other file format support of any illustration program.

And boy! Look at these killer features. You can drag and drop

images from Adobe™ Photoshop™ right into the application; turn your Adobe Illustrator™

artwork into raster images and apply Photoshop™ filters; and edit and colorize 1 bit TIFF images. And you can run a full array of plug-ins for Adobe Illustrator and Photoshop. Now you can even drag and drop the logo you've created into Adobe PageMill™ to start building your web site today.

You also get a CD-ROM with 300 Type 1 fonts, Adobe 2000+ Dimensions™ 2.0, 48 Gallery Effects™ filters, Adobe Screen Ready™, QuickTime™ tips and techniques, and more. Upgrade to the new Adobe Illustrator 6.0. Then turn your own genius loose. Call us at 1-800-521-1976, Ext. L1271 for more information or visit our web site at <http://www.adobe.com/>.



If you can *dream* it, you can *do* it.™

WONDER BOY



Adobe, the Adobe logo, Adobe Illustrator, Adobe Photoshop, Photoshop, Adobe Dimensions, Gallery Effects, and the tagline, "If you can dream it, you can do it," are trademarks of Adobe Systems Incorporated which may be registered in certain jurisdictions. All other marks and trademarks are the property of their respective companies. ©1996 Adobe Systems Incorporated. All rights reserved.

Reviews

Polaroid PDC-2000

NEW BREED OF CAMERA
CREATES IMAGES AS COOL
AS ITS HARDWARE

THE POLAROID PDC-2000 LOOKS like the sort of camera Buck Rogers would own. Festooned with a barrel sight, a topside LCD panel, and scads of differently shaped buttons, this slablike, faintly ribbed digital camera captures the essence of futuristic design. But apart from its strange appearance, it's a skillful piece of work, supplying the best image quality by far of any digital camera priced under \$5000.

Squint and Shoot

The PDC-2000 is a point-and-shoot rangefinder device that can automatically focus on objects as close as 10 inches. Like the ubiquitous self-developing Polaroid cameras, the PDC-2000 uses a sonar-type autofocus system. But unlike conventional cameras, which modify focus by moving the lens, the PDC-2000 moves its light-sensitive CCD to one of 60 pre-defined positions. Polaroid claims this approach enhances the quality and accuracy of the PDC-2000's focus, and judging by my results, I'm inclined to agree. Virtually every picture I took—including close-ups of moving targets—came out crystal clear.

The lens is a fixed f/2.8 11mm wide-angle model, with a field of vision equivalent to a 38mm lens on a standard 35mm camera. The PDC-2000 lacks a built-in



ROBERT PERRY

zoom, but you can replace the standard lens with a \$199 17mm (60mm-equivalent) alternative. The lens attaches and detaches easily enough, but its relatively large size (2 inches long) makes the process inconvenient. I was inclined to move closer to the subject whenever possible.

The PDC-2000's controls let you adjust white balance, compensate for back-lighting, and deactivate autofocus for shots through windows or around foreground objects. Each function has its own uniquely styled button, and the PDC-2000 remembers your settings from one

session to the next—distinct advantages over less-expensive digital cameras.

The PDC-2000's biggest disadvantage is its viewfinder, which is nearly as exasperating to use as a high-powered telescope's. Moving the camera the slightest fraction of an inch relative to your line of sight can result in your seeing absolute blackness, and you frequently find yourself looking at nothing more than your own eyelashes. It takes some effort to conform to the viewfinder's vexatious demands, but with practice you can frame your pictures accurately.

RATINGS

Outstanding ★★★★★ = 9.0–10.0

Very Good ★★★★ = 7.0–8.9

Good ★★★ = 5.0–6.9

Flawed ★★ = 3.0–4.9

Unacceptable ★ = 0–2.9

Fuss and Flash

The PDC-2000's communication skills leave something to be desired. When you frame a picture, the camera often beeps and displays a red light. This can mean the camera doesn't detect sufficient light, or that it has to charge the flash before the next shot. After you snap the picture, a light inside the viewfinder turns yellow, but that's the only indication a picture is being taken. Since each photo takes 7 to 12 seconds to process, you can spend a fair amount of time squinting inside the viewfinder to make sure your picture took.

Although I resent the 10 to 20 seconds the flash spends charging, I appreciate the results. This is a terrific flash for a point-and-shoot camera. It automatically provides full, fill, or ambient flash. Where the flash on most automatic cameras tends to wash out the subject, the PDC-2000 delivered consistently appropriate lighting, even when shooting close-up.

The Look of Lossless

A digital camera lives and dies by the quality of its images, and here the PDC-2000 comes through with flying colors. Rather than requiring you to specify the image's resolution when shooting a picture, the camera assigns every photo about a million rectangular pixels. The PDC-2000 carves up and interpolates the rectangular pixels to generate square pixels when you download the images to disk. You can interpolate the images down to 800 by 600 (about 500,000 pixels) or up to 1600 by 1200 (2 million pixels). It's refreshing to be able to evaluate resolution inside the studio—where you have the time and materials to make an informed decision—rather than out in the field.

Because the PDC-2000 eschews lossy compression, the 800-by-600-pixel images look nearly perfect, with excellent detail and true-to-life colors. The artifacts and noisy edges that plague JPEG-compressed photos from less-expensive cameras are altogether absent, so the PDC-2000 is an attractive choice for Web designers. At 1600 by 1200 pixels, the pictures are visibly softer, with slightly gummy edge detail. Even so, they compare favorably with similarly sized Photo CD images, which also tend to be soft.

Polaroid sells its digital camera in three variations. The \$3695 PDC-2000/40 that I reviewed offers 40MB of internal storage and holds up to 40 images. The \$2995 PDC-2000/T has no



Fantastic Fill Flash With this snake trying like crazy to escape into the bushes, I had little time to evaluate my light source or select an optimum angle. Fortunately, the PDC-2000 automatically compensated for the waning afternoon sunlight by adding a subtle ambient flash—enough to highlight the near side of the snake without eliminating its shadow. The result is an image rich in contrast and detail, particularly impressive given its limited chromatic range.



A Difference in Interpolation The PDC-2000 shoots pictures with elongated pixels, so you have to resample to a higher (left) or lower (right) resolution when transferring an image to disk. Although more pixels generally leads to better detail, you may prefer to download the low-res images since they take up considerably less room on disk and the detail that remains is crystal clear.

internal storage and must be cabled to your computer when shooting pictures. The \$4995 PDC-2000/60 includes a solid-state flash drive that holds 60 images, and better endures the bumps and shocks of field work, according to Polaroid. Given the \$1300 price difference, the PDC-2000/40 is the better deal.

Cabling and Charging

The PDC-2000 transfers images to your Mac via a SCSI connection, and the camera must be the last device in the chain. The included SCSI cable is only 3 feet long, which is awfully short when you are capturing pictures directly to your hard drive. The camera includes a tiny, nonstandard SCSI port, so you can't substitute a longer cable. The only solu-

tion is to purchase a specialized 6-foot cable from Polaroid for \$99.

Polaroid's functional PDC-2000 Direct software lets you transfer TIFF images to your hard drive or load them directly into Adobe Photoshop via a plug-in. For cross-platform users with SCSI-equipped PCs, Polaroid also bundles a Windows utility and a TWAIN module.

Four rechargeable NiCd batteries supply the PDC-2000's power. You plug the camera directly into a wall socket to charge the batteries, which I consider to be the height of convenience. Polaroid claims that the battery charge should last 150 pictures, but because I rarely shot more than 40 pictures in a single day, I wasn't able to take more than 80 pictures without recharging. You also have to factor in the time you spend retrieving the images from the camera—if you plug in the camera every time you transfer pictures, you'll reduce the life of the batteries.

The Last Word

The PDC-2000 is a new breed of digital camera that combines professional quality and affordability. All my complaints are fairly minor, and by and large are limitations of

digital photography technology.

If you've been waiting for digital cameras to mature, the PDC-2000 marks a clear jump from infancy to adolescence. And as an added incentive, you get a futuristic housing that's guaranteed to make you the envy of every computer geek on the block.—DEKE MCCLELLAND

RATING: ★★★★★/7.8 **PROS:** Great picture quality for the price; straightforward controls; remembers settings between sessions; excellent automatic flash; convenient recharging. **CONS:** Troublesome viewfinder; could provide better feedback; short SCSI cable. **COMPANY:** Polaroid (716/256-4436, ext. 868, <http://www.polaroid.com>). **LIST PRICE:** \$3695 as tested.

PowerBook Upgrades

SOLID PATH TO POWERPC FOR 500-SERIES NOTEBOOKS

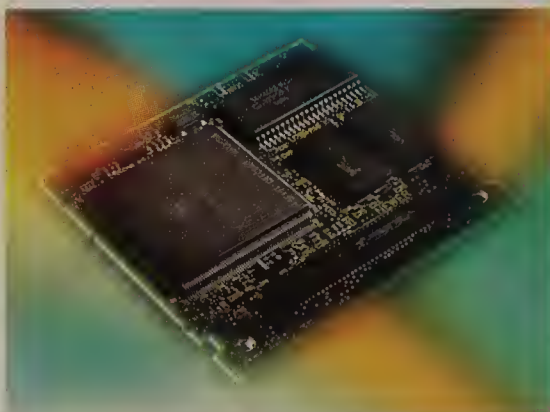
DESPITE MY EARLY-ADOPTER TENDENCIES, I avoided the first generation of PowerPC PowerBooks. I was proud of my restraint when the PowerBook 5300 series turned out to be buggier than a Louisiana swamp, and the recent recall made me even haughtier.

Like many PowerBook owners, I was willing to stave off my need for speed until Apple delivered its long-promised PowerPC upgrade. The wait was almost unbearable, but at last there are two upgrade choices for the 500 series.

Both Newer Technology's Nupowr and Apple's upgrade replace the daughter-card in your PowerBook; the Nupowr is equipped with a 117MHz 603e chip, while Apple's card sports a 100MHz 603e processor. The Nupowr comes in 4MB and 8MB flavors, as well as in a low-priced option with no on-board RAM; Apple offers a single 8MB model, priced nearly \$450 less than the comparable Newer card. (Both accept existing RAM, up to a maximum 36MB.)

The price difference is slightly offset by the speed difference of the two processors, but unlike the Nupowr—which voids your warranty—the Apple upgrade provides a one-year warranty extension. Newer offers an \$80 rebate when you send in your old 68040 daughtercard, but the offer is scheduled to expire at the end of June.

Unless you enjoy tinkering with the guts of your PowerBook, pay a dealer to install the upgrade. It should require less than an hour's worth of labor to install the board and the latest system software.



GIBSON

For the more technically inclined, the upgrade process is about as difficult as installing a modem and requires the same tools: a Torx wrench and a delicate touch.

Performance on Par

The Nupowr offers speeds comparable to a PowerBook 5300c's for most tasks, and outperforms the 5300c in floating-point operations such as spreadsheet recalculations. With its 100MHz processor, Apple's upgrade is slower, but not by much. Both upgrades offer a speed improvement of two to three times the 500-series' performance, and more if your work is spreadsheet- or graphics-intensive.

Time Will Tell

During testing, we uncovered two compatibility problems with both upgrades; the Newer documentation acknowledges these problems. Global Village internal modems won't work until you upgrade to version 2.5.5 of its software (included in the Nupowr package). And if you have an early version of the PC Card cage, you need to upgrade to Revision C, available free from Apple.

The biggest compatibility question surrounds Copland, the next generation of the Mac OS. Although Apple says it won't guarantee Copland's compatibility with any PowerPC upgrade card, Newer vows to do whatever it takes to make Nupowr work with Copland. Since Copland is still in development, *no one* can guarantee that any upgraded Macs will run with it; don't hold your breath.

The Last Word

Conventional wisdom says that you should never upgrade—better to sell your old machine and get a new one. But both of these products prove that axiom wrong by offering greater reliability and speeds comparable to the PowerBook 5300's. Newer's Nupowr is a better choice if you need to squeeze every ounce of speed from your PowerBook, but if you're more concerned with PowerPC compatibility and price, the Apple upgrade is the better value.—MATTHEW HAWN

Nupowr for PowerBook 500 Series

RATING: ★★★★★/7.3 **PROS:** Good performance; multiple configurations. **CONS:** Minor compatibility problems. **COMPANY:** Newer Technology (316/943-0222, <http://www.newertech.com>). **LIST PRICE:** With no RAM, \$745; with 4MB of RAM, \$975; with 8MB of RAM, \$1215 (all prices less \$80 rebate through June).

PowerBook 500 PowerPC Upgrade

RATING: ★★★★★/7.6 **PROS:** Less expensive than Nupowr; good performance; extends warranty. **CONS:** Minor compatibility problems; single configurations. **COMPANY:** Apple Computer (408/996-1010, <http://www.apple.com>). **LIST PRICE:** With 8MB of RAM \$769.



PowerBook Upgrades: Close to the Real Thing

■ Best result in test. Longer bars are better. Products listed in decreasing order of overall performance. Indexed scores indicate performance relative to a PowerBook 520c (520c = 1.0).

PowerBook Model (Processor)	RAM	Core Performance	CPU-Intensive	Floating-Point-Intensive	Disk-Intensive
5300c/117 (117MHz 603e)	32MB	2.89	2.02	11.05	1.75
520c w/Nupowr upgrade (117MHz 603e)	24MB	2.71	1.82	11.19	1.52
520c w/Apple upgrade (100MHz PPC 603e)	24MB	2.50	1.71	9.88	1.50

Behind Our Tests

Native versions of business applications were used to test PowerPC-equipped units; 68K versions were used for the PowerBook 520c reference system. (Since FileMaker Pro 3.0 was used in this benchmark, results should not be compared with previous PowerBook benchmarks, which used FileMaker Pro 2.13.)—Macworld Lab testing supervised by Matt Clark

Image-Management Programs

TROPIX AND CUMULUS TAME CHAOTIC IMAGE FILES—WITH VARYING DEGREES OF SUCCESS

BOTH CANTO SOFTWARE'S Cumulus Network Image Database 2.5 and Alaras's Tropix 2.0 promise to create order out of chaotic image files. Designed for anyone who needs to keep track of thousands of digital images over a network, these image-management systems let you catalog your image files for future reference. Cumulus emphasizes speedy cataloging and searching, while Tropix—at almost three times the price—also supplies built-in tools for file conversion and batch processing.

Cumulus 2.5

Cumulus lets you catalog information about thousands of multimedia files—clip art, scans, movies, sounds, even Power-Point presentations and QuarkXPress page layouts—in a searchable database that users can share over a network. (A \$199 single-user version is also available.) Version 2.5 adds excellent support for AppleScript and several useful scripts that automate database functions. Canto also recently announced the Cumulus Internet Image Server, a free CGI (Common Gateway Interface) that enables Cumulus to serve images on the Web.

Cumulus Network turns a Macintosh into a centralized server for your image catalogs and lets you control access to the image databases, while Cumulus Client lets users on the network view and modify the catalogs. Both let users add, delete, and rename images and add notes and keywords to catalog entries.

Cataloging files in a Cumulus database is simple, if not particularly fast. You choose the Catalog command and direct the program to the files you want to include; Cumulus creates a thumbnail representation of each image file and logs the file information (rather than the actual file) into its database. Unfortunately, you can't drag the thumbnails into a new order or change their size. Cumulus makes up for that by accepting a wide range of file formats and offering 33 import filters that can be turned on or off individually. You can even use the included plug-ins to export images directly from a Cumulus database into QuarkXPress, Adobe Photoshop, or Adobe Illustrator.

Cumulus's Find command speedily searches for files using up to 15 criteria, such as keyword or file type; you can also drag an image thumbnail into the Find window. Locating a file in a database containing hundreds of images took only a few seconds in my tests. Creating keywords and assigning them to catalog entries is also a simple drag-and-drop



Order Out of Chaos You can organize images with Cumulus by dragging words from the Keywords window and dropping them onto thumbnails.

process. These features make Cumulus a more powerful database tool than image browsers such as Adobe Fetch and Kudo Image Browser and vastly superior to Tropix. Just pray you don't run into trouble: a tech-support number is nowhere to be found.

Tropix 2.0

While Cumulus is designed for organizing, browsing, and copying images, Tropix can also convert the formats, sizes, and resolutions of the cataloged images. Tropix can convert files automatically, but that's its only real selling point; as a network image database, the program is slow, awkward, and buggy.

Tropix Server, for example, does nothing more than open an existing Tropix image database and make it available to clients on the network. To create or modify a database or set access privileges for other database users, you need Tropix Client or the \$490 single-user program. Even the mechanism for opening a database with the server software is clumsy; you have to open both the main database and an auxiliary database file.

The Tropix Client program is somewhat better, although the first version I tested was buggy and confusing. (After I called about the problems, Alaras fixed the bugs and released version 2.0.5.) To add images to the database, you simply select them in the hierarchical view and drag them to the catalog button on a floating palette; Tropix catalogs the file information, then creates a thumbnail and a low-resolution preview image.

Fixing the interface glitches didn't make Tropix any stronger as a database, however: its search capabilities are limited, and the search engine is considerably slower than Cumulus's. And although you can create an unlimited number of custom fields for storing image data, you can't search on those fields. (Alaras says Tropix 2.1 will have a new search engine and an updated interface.)

The Last Word

While it lacks some flexibility in the way it displays thumbnails, Cumulus is a powerful, well-designed tool for managing images and sharing them over a network. Its AppleScript and drag-and-drop support make it especially appealing. Tropix, on the other hand, isn't worth considering until its interface is improved and the search engine beefed up.—JOSEPH SCHORR

Cumulus 2.5

RATING: ★★ ★/6.9 **PROS:** Supports a range of file formats; fast searching; users can share image catalogs over a network. **CONS:** Can't reorder or resize thumbnails; no technical-support number provided. **COMPANY:** Canto Software (415/905-0300, <http://www.canto-software.com>). **LIST PRICE:** Server with five clients \$1795; additional five-client packs \$1195.

Tropix 2.0

RATING: ★★ ★/3.7 **PROS:** Translates a wide range of graphics formats; supports batch processing. **CONS:** Confusing interface; weak search engine and server software. **COMPANY:** Alaras (919/544-1228). **LIST PRICE:** Server \$4990.

UniQorn 1.01

QUICKDRAW GX SUPPORT—BUT NOT MUCH ELSE

UNIQORN, A NEW PAGE-LAYOUT system from United Kingdom-based SoftPress Systems, has typographic controls that rival those found in desktop publishing giants QuarkXPress and Adobe PageMaker. But while the fledgling program is unique in its support of QuickDraw GX, it's too quirky, sluggish, and unpolished to be a real threat to the competition.

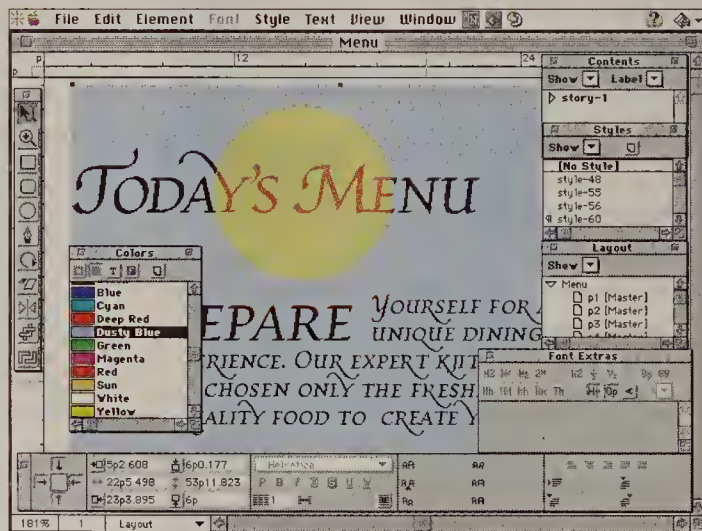
A Unique Approach

Designed to produce professional color layouts, UniQorn is strikingly similar in look and feel to PageMaker and QuarkXPress. In other ways, its approach to document construction is unique. For example, each page in a UniQorn document is composed of frames, which can contain either text or graphics. (In contrast, QuarkXPress uses two kinds of containers for imported content—text boxes and picture boxes.) To add content to a UniQorn page, you draw a frame (a rectangle, rounded rectangle, oval, or custom shape) and import text or graphics into the frame. Unfortunately, UniQorn handles these tasks—from importing graphics to formatting text—considerably more slowly than the competition.

Another of UniQorn's distinguishing features is what SoftPress calls *flexible presentation*: when you add a frame to a page, you can assign frame dimensions that are relative to the page rather than fixed, absolute values. If you change a document's page size or orientation—to turn a portion of a book into a brochure or to turn a printed document into an Acrobat file, for example—all the frames on your pages automatically resize and reposition themselves accordingly.

The program's handling of style sheets is also unique and somewhat confusing. Every time you add a formatting attribute to selected text in a frame, UniQorn creates a new temporary style and displays it in the Styles palette. You can

⌘-click on a temporary style at any time to rename it and make it permanent. What's confusing is that a style created this way doesn't have all the attributes of the text on which it is based, but only those that were added to the previous style. For example, if you select an existing block of text and apply a new color to it, UniQorn creates a new temporary style that contains *only* the color information. All the other attributes—font, size, leading, and so on—are ignored. On the plus side, UniQorn lets you embed HTML tags in each style definition so you can export text that's ready for the Web.



Fonts with a Flourish UniQorn's Font Extras palette lets you access QuickDraw GX-specific features, such as flourishes and swashes, when formatting GX fonts. The Layout palette displays an overview of the frames on each page, and the Contents palette lets you navigate a document by story rather than by page.

Control and Complexity

Thanks to its support of QuickDraw GX, UniQorn allows tremendous control over typography. You can adjust characters' weight and slant precisely, or apply ligatures, swashes, flourishes, fractions, superscripts, and subscripts—provided you're using GX fonts that contain enhanced character sets. And that's the problem: to take advantage of certain features, you *need* GX fonts, and UniQorn includes only a handful. The program won't even run without QuickDraw GX 1.1.1, which in turn eats up another 2.5MB of RAM and may introduce compatibility problems as well.

Along with all the precision font and frame controls comes an unforgiving

complexity. UniQorn's numerous palettes are crammed with tiny, cryptic buttons, icons, and fields that do little more than hint at their functions. The Control palette's Frame Controller area, in which you determine whether a frame's dimensions are fixed or relative, is almost incomprehensible without extensive fumbling about in the manual. And the manual itself is weak, with alien terminology and complex explanations ("A child frame has two sets of three interrelated parameters..."). Adding to the program's complexity is poor organization of menu commands; for example, Find/Replace is found not in the Edit menu (as in most programs) but in the Text menu.

As a basic page-layout program, UniQorn lacks some standard features. You can't, for example, create gradient fills or apply tints of existing colors. Word processing features are also weak: the program doesn't support drag-and-drop text editing, there's no word-count feature, and you can't paste text into the Find/Replace dialog box.

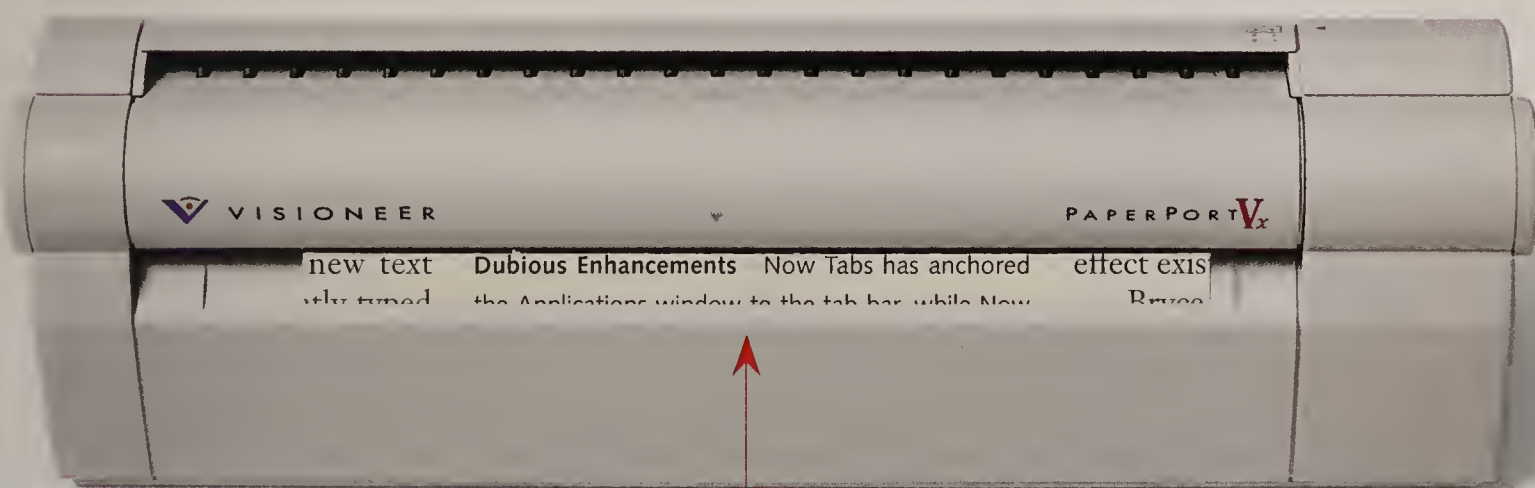
Beyond that, some features appeared mysteriously nonfunctional in the version I tested. When you lock a frame, for example, the Lock command remains undimmed in the Element menu. And while locking a frame prevents you from dragging it in the layout, it doesn't stop you from changing all of its settings in the Control palette, because it's not really locked. Finally, I experienced repeated crashes even after allocating extra memory to the program.

The Last Word

UniQorn's approach to document creation is certainly unique, and the program's QuickDraw GX support allows you to create some gorgeous typographical effects. It's no Quark-killer, but with some polish and more stability UniQorn may someday be able to hold its own in the competitive world of page layout.—JOSEPH SCHORR

RATING: ★★ ★/5.3 **PROS:** QuickDraw GX support; resizes and positions frames when document orientation changes; precise typographical controls. **CONS:** Slow; confusing interface; buggy; weak word processing features; can't apply gradient fills or tints; inadequate manual. **COMPANY:** SoftPress Systems Limited (415/331-4820, <http://www.softpress.com>). **LIST PRICE:** \$895.

Go ahead, feed it.



TO SEE HOW VERSATILE OUR
PAPERPORT Vx IS,
JUST FEED IT A PIECE OF PAPER.

HOPE FOUND FOR PACK RATS

NEW YORK. Researchers will release a study today that shows there is some glimmer of hope for America's 2.4 billion pack rats—those among us who insist on holding onto scraps of paper, old magazine articles, and news clippings. In recent scientific tests, laboratory personnel determined that pack-rat behavior was, in fact, completely normal and an inherent part of human nature. The tests also discovered that a majority of pack rats were convinced they could kick the clutter-collection habit, if given the right tools. Researchers are now in a quest to determine what those tools might be. A team of more than 300 scientists believe they have found that tool in a product invented by Palo Alto-based Visioneer.

David Markman

PAPERPORT Vx GETS RID OF CLUTTER

Then there are all of those recipes, financial statements, Dear Binky columns, and newspaper articles you just can't bear to part with. You can use PaperPort to scan paper as long as 30 inches, and photos in up to 256 shades of gray. So you can save them forever, and get rid of the originals—with no remorse.

PAPERPORT Vx™ MEANS YOU'LL NEVER AGAIN HAVE TO WASTE TIME RETYPING

It can scan thousands of words in minutes—from virtually any type of document. Reports. Memos. Letters. Then PaperPort Vx's integrated OmniPage LITE™ OCR software converts these words to digital format so they can be edited or copied.

PAPERPORT Vx KEEPS TRACK OF YOUR CONTACTS

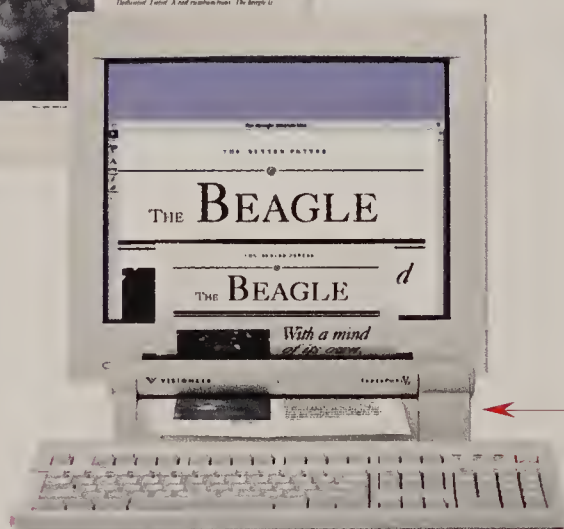
Tired of forgetting people's names and numbers? Just scan business cards into PaperPort, and its CardScan SE™ software automatically creates a file of your business contacts—all on your personal computer.

THE BEAGLE



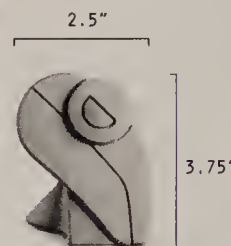
With a mind of its own, can you really train a beagle to be your best friend?

Illustration: Leland A. and Associates Inc. The Beagle is

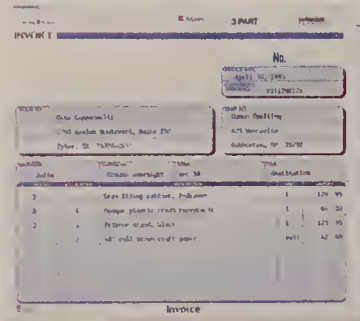
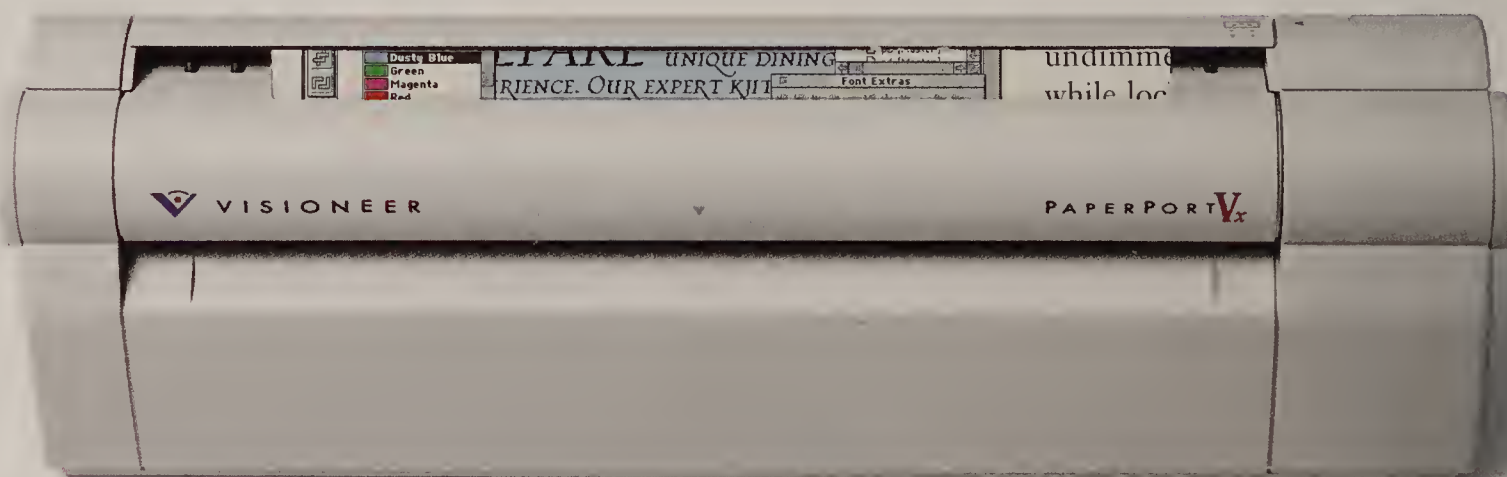


PAPERPORT Vx FITS EASILY INTO YOUR WINDOWS OR MAC SYSTEM

It's sleek and small. It rests right between your keyboard and monitor.

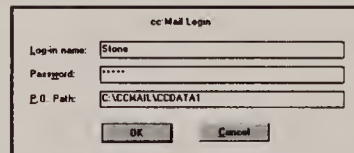


Now see what you've done.



PAPERPORT Vx MAKES SMART ARCHIVES

Imagine never having to rummage to find an important slip of paper: PaperPort lets you create archives of critical documents—receipts, invoices, your car registration, even those love notes from the 7th grade.



PAPERPORT Vx PUTS POWER BEHIND YOUR EMAIL

You're reading the Sunday paper and come across a hot article about your competition. So you scan it in, annotate it, and email it to your sales team overseas—giving them the data they need to win a big account Monday morning.



PAPERPORT Vx IN THREE EASY STEPS

1. Feed in a document. In as quick as 2 seconds, it's scanned.
2. Drag and drop it onto one of 100 popular applications.
3. Edit, copy, print, email, fax, file, or tweak the material as necessary.

PAPERPORT Vx TURNS YOUR PRINTER INTO A COPIER, AND YOUR COMPUTER INTO A FAX MACHINE

Save desk space—not to mention dollars. Scan a document into PaperPort and print it from your personal computer. Or save your paper and fax it, using your modem.

YES, FEED ME MORE...

1-800-787-7007, ext. 555
http://www.visioneer.com
Or contact an authorized reseller.

PAPERPORT Vx™

 VISIONEER

Now Utilities 6.0

WHEN BAD UPGRADES
HAPPEN TO GOOD PRODUCTS

VERSION 6.0 OF NOW UTILITIES adds three new components—Now AutoType, Now Shortcuts, and Now Tabs—to its collection of system enhancements. Unfortunately, these additions are neither compelling nor innovative, and probably aren't worth the price of the upgrade for current Now Utilities owners.

Now AutoType works in any application to expand an abbreviation into a word, phrase, or paragraph. For example, if I type the abbreviation *tnadd*, AutoType replaces it with my name and mailing address. AutoType can also use hot keys. AutoType triggers only after you type the abbreviation followed by a tab, space, or return, so if you want to include a text macro before a comma or at the end of a sentence, you're forced to type unnecessary keystrokes. Casady & Greene's Spell Catcher (previously Thunder 7) and the shareware TypeIt4Me do a far better job, triggering after any punctuation.

AutoType's one partially redeeming feature is that it can suggest new text macros by watching for frequently typed phrases, but the manual fails to mention that this feature requires you to enable Now Save's keystroke saver. I found AutoType maddeningly inconsistent, sometimes working properly, sometimes not, for no detectable reason.

When you click on a file or folder in the Finder while holding down a modifier key, Now Shortcuts pops up a menu that lets you perform common functions on the item, such as duplicate or make an alias. Since these features are already available from the Finder's menus, Now Shortcuts isn't especially valuable.

Now Tabs displays a bar at the bottom of the screen in the Finder. Drag an open window to the bar and it becomes a tab. Clicking on the tab pops up the window. The trouble is, tabs are just open windows; you can't drag applications or documents to the tab bar. Now Shortcuts and Now Tabs accept plug-in modules to extend their capabilities, so they may become more valuable as Now and third parties create new plug-ins.

The other Now Utilities components are little improved. The excellent Now Super Boomerang and Now Menus, as

well as Now Folder Menus, can now create hierarchical menus ten levels deep. Other components got some bug-fixes and minor enhancements, though Now Save seems to have *more* bugs; it crashed my Mac regularly until I disabled it. Now Scrapbook was neglected altogether; it still doesn't support drag and drop.

One unwelcome change is a new installer. Inexplicably, Now Software ditched the previous Now Installer, which allowed you to install, remove, or update any or all components, in favor of a program that installs all components and doesn't allow a custom install.

A slew of angry messages on Now Software's AOL support forum testified to the wisdom of waiting for bug-fixes



Dubious Enhancements Now Tabs has anchored the Applications window to the tab bar, while Now Shortcuts allows me to label the folder—just as I could have done from the Finder's Label menu.

before upgrading. A Now spokesperson promised that updates will be available to cure some, if not all, of the problems found in my testing.

The Last Word

Now Utilities remains a good set of desktop utilities because the core components alone—Now Super Boomerang, Menus, Startup Manager, and WYSIWYG Menus—justify the package price. If you don't already have Now Utilities, it's worth purchasing. For current owners, however, version 6.0 gives no compelling reason to upgrade.—TOM NEGRINO

RATING: ★★ ★/6.4 **PROS:** Now Super Boomerang, Menus, and WYSIWYG Menus provide must-have enhancements. **CONS:** New components are lightweights; Now Save and AutoType are buggy. **COMPANY:** Now Software (503/274-2800, <http://www.nowsoft.com>). **LIST PRICE:** \$89.95.

Bryce 2

CREATE AWE-INSPIRING, PHOTO-
REALISTIC 3-D LANDSCAPES

METATOOLS' BRYCE 2 GENERATES stunning, fractal-based 3-D terrain objects that you can embellish with natural-looking textures and visual effects. Ray tracing enhances the photo-realism of these images, which are suitable for professional-level illustration, video, or multimedia production.

Beyond generating terrain objects, Bryce 2 gives you tools for building infinite planes representing the ground, water surfaces, and cloud layers; an array of object primitives for building simple structures; and an assortment of lighting options. Other tools build symmetrical terrain objects, variably shaped stones, and freestanding 2-D PICT objects. Bryce also lets you apply Booleans to grouped objects. You can gouge one object with another or build a new object from the intersecting surfaces of two shapes. However, these are rendering Booleans, not object-editing tools; the objects themselves aren't altered, and the effect exists only in the rendered image.

Bryce 2 won't be your first choice for object modeling. It's more capable than its predecessor, but its shape-manipulation capabilities are limited. Producing complex Boolean objects can be cumbersome. You will appreciate Bryce 2's ability to import models as DXF files—a feature sorely missing from version 1. Of course, Bryce's forte is creating images, not modeling, and it does that beautifully. With the terrain editor, you can manipulate the gray-scale map that controls the visual contours of mountains. You can make mountains taller or more jagged simply by painting in the editor. Other controls let you change surface conditions; for example, you can sharpen or soften edges.

The Sky&Fog palette offers a wide array of shadow, fog, haze, and cloud effects (see "Suitable for Framing"). You can adjust the clouds' frequency from a few fair-weather puffs to completely overcast, and fine-tune their density from lacy cirrus to dark, threatening nimbus. Similarly, you can obscure nearby objects with fog and drape distant mountains with wispy haze. Each element is independently adjustable and infinitely variable.

continues

Bryce 2 offers equally extensive control over individual object texturing. The materials editor lets you combine textures and manipulate surface properties and has some of the best texturing controls anywhere. In fact, it's so easy to add rendering complexity that generating images can take hours, even on a Power Mac.

A large collection of preset options for environments, terrains, and material textures is included, as is an assortment of useful Boolean objects and PICT images. Best of all, the CD includes dozens of completed landscapes that you can deconstruct and study.

Bryce 2 invites you to experiment. Unfortunately, it also *requires* that you do so; the thin manual only skims the surface and would benefit from a thorough edit (for example, it refers twice to nonexistent sidebars). The CD-based documentation duplicates the printed manual,



Suitable for Framing Studying scenes like this one, from the program CD's Sky&Fog palette, can help you learn Bryce imaging techniques.

errors and all, and includes a Deep Reference that's deep in name only. Bryce 2 isn't difficult to use, but expect to spend time learning its nuances and adjusting to its unique, visually pleasing interface.

The Last Word

Although limited in its object-modeling capabilities, Bryce 2 is wonderful for creating professional-quality 3-D landscapes and natural-looking environments. And have I mentioned how much fun it is?—CARLOS DOMINGO MARTINEZ

RATING: ★★★★★/7.7 **PROS:** Produces extraordinary landscapes; excellent texturing controls. **CONS:** Limited modeling capabilities; weak documentation. **COMPANY:** MetaTools (805/566-6200, <http://www.metatools.com>). **LIST PRICE:** \$299.

Peak 1.02

DIGITAL-AUDIO PROGRAM COMBINES VERSATILITY AND POWER

PEAK, A RECORDING AND EDITING program, joins the Mac digital-audio jam session with an appealing mix of features and performance. Like Macromedia's SoundEdit 16 and Digidesign's Sound Designer II, Peak 1.02 is a professional-quality waveform-oriented program. But it's the only one that supports both software-only audio and dedicated audio cards.

Peak isn't designed for multitrack recording, unlike Macromedia's Deck II 2.5 and Opcode's DigiTrax. While multitrack programs can record six or more tracks, Peak lets you record only two.

Peak's basic editing and playback features are unmatched. The program allows an unlimited number of Undos, and it doesn't make changes to a file until you save, making editing extremely fast. An Edit window lists alterations and lets you restore the file to its state at a specific point. Unlike SoundEdit 16 and Sound Designer II, Peak continues playing audio in the background when you switch to a different program. You can even modify a sound file while playing it.

Peak's scrubbing feature is unique. Rather than lowering the playback pitch as you scrub, Peak retains the original pitch. (It does so by repeating snippets of the audio file over and over.) This sounds disconcerting at first—scrubbing slowly often delivers a Max Headroom-style stuttering effect—but it works well. For traditionalists, Bias plans to add tape-style scrubbing to Peak 1.1, a free upgrade that should ship by the time you read this.

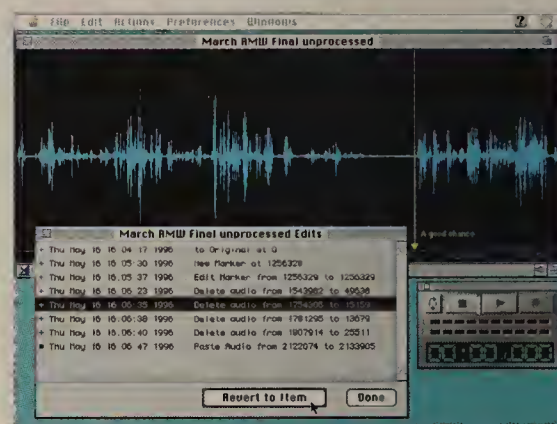
Unlike SoundEdit 16, Peak doesn't provide built-in audio effects such as reverb and echo. This isn't a serious shortcoming, however. Peak does support Adobe Premiere-format audio filters; several filter and effects collections are available from Waves (<http://www.waves.com>) and InVision Interactive (<http://www.cybersound.com>). These are first-rate packages; Waves offers the premier plug-in collection for high-end audio work.

Peak also has a proprietary plug-in format. Bias offers four plug-in families: one produces special audio effects, one lets you edit and loop sounds for music samplers, one provides click removal and other audio-processing functions, and

one combines Peak with a database manager to manage a library of sound files. Each package retails for \$129.

Peak 1.02 lacks SoundEdit 16's broad file-format support; it can't even import or save Windows-format WAV files. Peak also lacks bit-depth conversion options such as dithering. Bias plans to add more file-format and conversion support to future versions. Meanwhile, Peak users who need top-quality bit-depth conversion and optimizing can turn to Waves' L1 Ultramaximizer or AudioTrack.

Peak 1.02 is incompatible with System 7.5.3, but version 1.1 should fix this. Also, Peak 1.02 doesn't let you open QuickTime movies and edit their sound-



A Peak Inside Peak's unlimited Undo feature makes it easy to experiment with edits.

tracks. Bias plans to add QuickTime sound support to version 1.1; meanwhile, you can work with QuickTime audio by exporting soundtracks as AIFF files.

The Last Word

If you need audio software that will let you do multitrack recording, file-format conversion, QuickTime soundtrack editing, and Web or CD-ROM optimizing, your best bet is Macromedia's \$399 bundle of SoundEdit 16 and Deck II. But if you're looking for a program that will sail through complex editing jobs, support a dedicated audio card, and also talk to a sampler, look no further than Peak. It's a first-rate program for professional audio work.—JIM HEID

RATING: ★★★★★/6.9 **PROS:** Fast; unique scrub feature; extensible; supports software-only audio, as well as dedicated audio cards. **CONS:** Limited file-format support; offers no dithering in bit-depth reduction. **COMPANY:** Bias (415/331-2446, <http://www.bias-inc.com>). **LIST PRICE:** \$299.

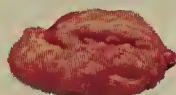
WHAT YOU NEED TO USE FIRSTCLASS *groupware.*



A: PULSE



B: LIMBS



C: PANCREAS
(optional)

Inhale. Exhale. Inhale. Congratulations — you have what it takes to use FirstClass, the best-selling e-mail and groupware for Mac OS. FirstClass has everything you want in a messaging system. Like superb Internet connectivity, a great Mac interface, excellent replication, and a rock-solid server that offers outstanding reliability. We even offer free upgrades and free support. The competition doesn't. And FirstClass installs in a fraction of the time it takes to load other systems. One disk, one push, five minutes, you're done. Before you know it you'll have a rich, fully featured messaging system up and running for far less than comparable groupware. So if you're looking for messaging the whole company can use, get FirstClass from SoftArc. It's the best Mac OS e-mail money can buy. Oh, by the way, you can exhale now.



E-MAIL COLLABORATION DATABASE ACCESS SEARCHING INTERNET ACCESS REMOTE ACCESS *Messaging software that's not hard*

FOR A FREE DEMO COPY OF FIRSTCLASS MESSAGING, CONTACT US AT www.softarc.com OR 1-800-SOFTARC EXT. 45

SoftArc Inc., 1902 Ridge Road #325, West Seneca, New York, 14224. Tel 905-415-7000 Fax 905-415-7151 or info@softarc.com. "FirstClass" is a trademark of SoftArc Inc.



MICROSPOT PhotoFix 3.0

Full featured photo editing
and more without a RAM
upgrade!

\$99



To order PhotoFix or 3D World:

1-800-622-7568



MICROSPOT 3D World

New generation 3D. Easy
to use, real-time rendering
for instant results.

\$99



Microspot USA, Inc. (408) 253-2000

Se habla español

Demo copies available - www.microspot.com

Circle 3 on reader service card

Reviews

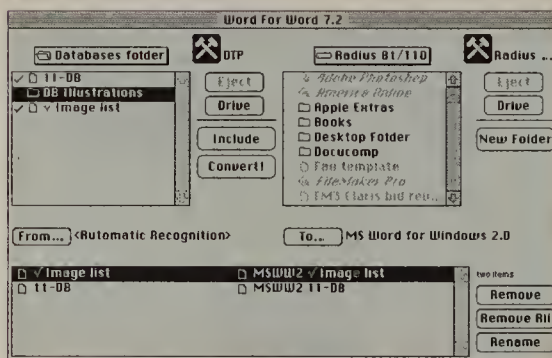
Adobe File Utilities

MAC UTILITIES ARE BETTER ON WINDOWS

ADobe File Utilities 1.0 combines updated versions of DocuComp and Word for Word in a cross-platform package for Macs, PCs, and Unix workstations. Sadly, these formerly Macintosh-only tools are better integrated and more powerful in the Windows adaptation.

Adobe File Utilities consists of several components—some cross-platform and others platform-specific. The main component is Word for Word, a file-conversion utility. While rich in DOS and Windows support, Word for Word doesn't support several current Mac word processors. Also, converted spreadsheets do not include formulas, graphics, or macros; and database support is weak.

The Mac version of Word for Word includes Document Converter, a handy drag-and-drop utility. To convert files,



Translating Files with Word for Word Word for Word identifies the file type of each original document, while you select the type to which it will be converted.

you drag documents onto a Document Converter icon. You can dedicate different icons to different file conversions.

Under Windows, Word for Word has notable enhancements, including context-sensitive help, the ability to filter the file list, and a direct link to the Viewer application (enabling you to see any file before converting it). Alas, the Mac version doesn't include these features.

You'll find Word for Word most valuable when you routinely have to deal with unusual or old PC applications, you don't already have other translators, or your current programs do not offer appropriate import and export options.

DocuComp compares different versions of a document, showing all additions, deletions, and moves. On the Mac, only WordPerfect 2 and 3, Microsoft

Word 4 and 5, and text files are supported.

After choosing two files to compare, DocuComp displays them both. You can show text that has been added, deleted, or moved in different colors or font styles. As you review the differences, the document windows scroll in sync. You can print or save a composite document that shows the differences, as well as a revision list. DocuComp can ignore selected text blocks and font styles when making comparisons. You can also specify table-handling options, vary settings for the composite document, and set comparison sensitivity.

The most impressive part of Adobe File Utilities is only available for Windows. Viewer enables you to view, print, and search for text within documents from almost any Mac or PC application. Viewer can also unzip PKZip archives, UUEncode or UUDecode files, copy text and graphics to the clipboard, and display the document at different magnifications.

Adobe File Utilities includes Adobe Acrobat Reader, letting users read, search, and print the text of the online manuals. To the dismay of many (including myself), no printed manuals are provided.

The Last Word

Adobe File Utilities 1.0 is a much stronger package for Windows than for the Mac. If you work in a mixed-platform office or also use a PC, you may well find the Windows components—particularly Viewer—indispensable. Mac users, on the other hand, may feel that Adobe has slighted them. While the Mac components work well, they lack the capabilities of the Windows software.

File-conversion utilities are common on the Mac, and you may already have a program (such as Microsoft Word 6) that does document comparisons. For many of us, the only "to-die-for" utility in Adobe File Utilities is Viewer. And Viewer for the Mac doesn't exist.—STEVE SCHWARTZ

RATING: ★★ ★/5.3 PROS: All platforms supported on single CD-ROM; easy to use; drag-and-drop file conversions. **CONS:** No printed documentation; spreadsheets converted by Word for Word lose formulas, macros, and graphics; few compatible word processors for DocuComp; Viewer is only for Windows; one free support call. **COMPANY:** Adobe Systems (415/961-4400, <http://www.adobe.com>). **LIST PRICE:** \$149.

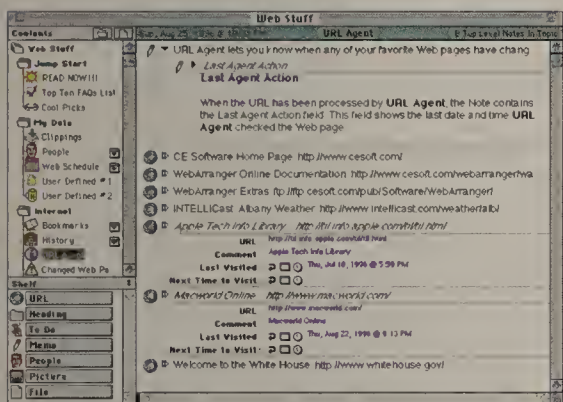
Internet-Aware PIMs

IN CONTROL AND WEBARRANGER
JUMP ON THE INTERNET BANDWAGON

THESE DAYS, EVEN PERSONAL information managers are expected to be Internet-savvy. In Control 4.0 and WebArranger 2.0 are two PIMs that have been successfully updated to meet that challenge. Even if you don't spend much time on the Net, both are a worthwhile investment.

In Control 4.0

Like its predecessor, In Control for Workgroups 3.5 (see *Reviews*, September 1995), In Control 4.0 lets you view an outline, a calendar, or both. Even though *Workgroups* has been dropped from the



Special Agent WebArranger's URL Agent automatically tracks changes to specific Web pages.

name, In Control 4.0 retains the ability to share data without a dedicated server. Its approach to sharing schedules isn't as flexible as that of server-based PIMs like Now Up-to-Date, but it should suffice for most applications.

A database-lookup function lets you copy contact information from several address-book and database programs, including Now Contact and Claris FileMaker Pro. Version 4 also sports several cosmetic and performance enhancements.

In Control's new Link to Internet Site command links any item in an In Control file to a Web page: simply double-click on a linked item's bullet while holding down the control key to open your Web browser and go directly to the desired site. In Control also lets you import and export Netscape Navigator bookmarks or import URLs from HTML text files.

WebArranger 2.0

WebArranger began life as Arrange, an unusual database/PIM hybrid. Although it worked well for storing day-to-day

information (see *Reviews*, December 1994), it was harder to use than dedicated PIMs and never attracted much of a following. CE Software recently acquired Arrange from Common Knowledge and repackaged it as a capable Internet utility.

Although its PIM functions are no more accessible than Arrange's, WebArranger's new Internet tools are well adapted to life on the Web—the program is great for organizing Web pages and storing E-mail addresses. Simply click on an URL and press ⌘-R to launch your Web browser and go to that site.

WebArranger's *agents*, which automate various Internet housekeeping chores, are even more valuable. The URL Agent checks at predefined intervals to see if a Web page has changed (see "Special Agent"), and the FTP Download Agent periodically logs on to busy FTP sites to download files. WebArranger also comes with ForeFront's WebWhacker, a separate application that lets you download Web pages and view them offline.

WebArranger's lone weak point is skimpy documentation. The program comes with extensive help in a WebArranger document, and CE's Web site offers a wealth of useful information, but I'd still prefer a more thorough printed manual (CE says a new manual is in the works).

The Last Word

If you're searching for a general-purpose scheduler and you're comfortable using outlines to prioritize tasks, In Control 4.0 is an excellent choice. WebArranger isn't my first pick as a PIM, but its powerful Internet functions make it indispensable for Net jockeys.—FRANKLIN TESSLER

In Control 4.0

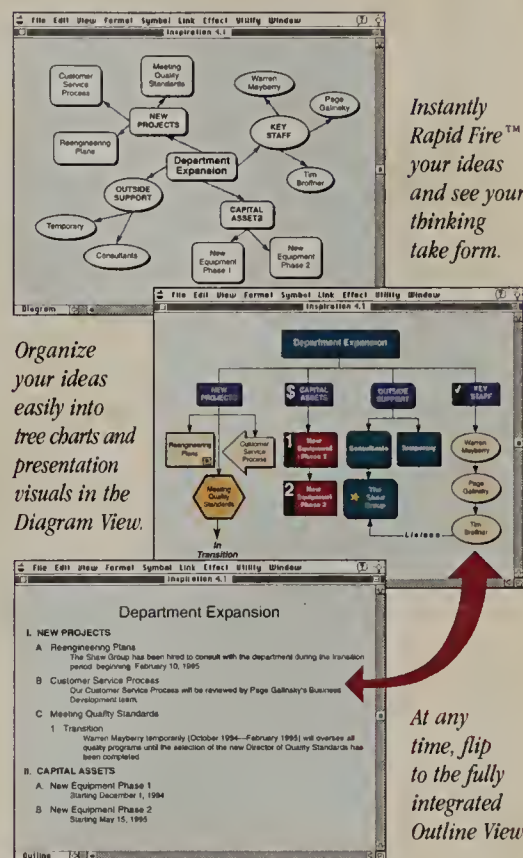
RATING: ★★★★★/7.0 **PROS:** Powerful schedule manager; launches URLs directly. **CONS:** Data sharing could be more flexible. **COMPANY:** Attain (617/776-1110, <http://www.attain.com>). **COMPANY'S ESTIMATED PRICE:** \$85.

WebArranger 2.0

RATING: ★★★★★/7.1 **PROS:** Organizes and launches URLs; automates Internet chores. **CONS:** Skimpy manual. **COMPANY:** CE Software (515/221-1801, <http://www.cesoft.com>). **LIST PRICE:** \$99.95.

Instantly Visualize Concepts

Getting clear and focused right at the start of a project is often the most difficult part. The next time you begin to develop an idea or plan, use Inspiration®—the real-time idea development tool for quickly clarifying and organizing your thoughts.



Call (800)877-4292
to request your

FREE IDEA BOOKLETS

Instant Idea Clarification • Quality Diagrams & Process Flows
Effective Idea Meetings • Quick Presentation Visuals

Inspiration®
The Real-Time Idea Development Tool

Inspiration Software®, Inc.
503.297.3004 Tel. • 503.297.4676 Fax
Web Site <http://www.inspiration.com>

©1995 Inspiration Software®, Inc.

Nothing comes closer to reality.

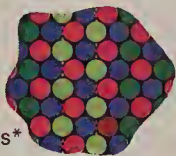


**"SuperScan took top honors
in every important performance category"**
Macworld



In February, Macworld editors voted the SuperScan Mc 21 their "runaway favorite for focus, brightness, contrast, and color." Send for a free information kit and learn why. For example, the exceptionally fine dot pitch in our Mc 21 monitors displays 40% more pixels than our competitors' aperture grill technology. That translates into crisper detail and the sharpest image you can buy. To learn more, call NSA at 800 441-4832. Or dial our faxback system at 800 555-8552.

SuperScan 21" shadow mask
0.22 mm horiz. pitch
0.21 mm mask
1818 displayable pixels*



0.22 mm

Competitors 21" aperture grill
0.31 mm stripe pitch
0.30 mm mask
1290 displayable pixels*



0.31 mm

	NEW SuperScan Mc 21HR	SuperScan Mc 21	SuperScan Mc 20	SuperScan Mc 17	NEW SuperScan Mc 17s
Viewable Image Size	20"	20"	18.7"	15.9"	15.7"
Maximum Resolution	1600 x 1200		1600 x 1200	1360 x 1024	1280 x 1024
Scan Frequency	31-95 KHz 50-160 Hz	31-85 KHz 50-160 Hz	30-82 KHz 50-120 Hz	24.8-82 KHz 50-120 Hz	30-64 KHz 47-104 Hz



MPR II

3-year warranty

Macintosh plug & play

Colorific



NSA 100 Lowder Brook Drive, Westwood, MA 02090
Tel: 800 441-4832 Faxback: 800 555-8552

*Assumes 400mm horizontal display size. The ENERGYSTAR™ emblem does not represent EPA endorsement of any product or service.

RASTEROPS™

SuperScan
An advantage you can clearly see.

HITACHI

Circle 74 on reader service card

TeleFinder 5.0

BBS SOFTWARE THAT UNDERSTANDS THE NET

BULLETIN BOARD SYSTEMS HAVE an image problem in the age of the Internet, but Spider Island's TeleFinder 5.0 may help change all that. This BBS software now doubles as a Web server, offering limited Internet access without sacrificing the user friendliness and collaborative spirit of a BBS.

In its new incarnation, TeleFinder gives small businesses the flexibility of open E-mail standards and the proprietary and control features of a BBS. Like SoftArc's FirstClass, it uses an SMTP gateway to deliver Internet mail automatically to the proprietary client software. But TeleFinder also supports the POP3 standard for Internet mail, allowing travelers to pick up their mail from the road using popular clients like Qualcomm's Eudora and Claris's EMailer instead of the TeleFinder client. TeleFinder's mail server is better integrated with Internet protocols, such as HTTP. And Spider Island has added a basic Web server that supports CGI scripts and multithreading. Although FTP is a faster, more powerful way to upload Web pages, TeleFinder makes the process much simpler.

TeleFinder functions as a client/server application, with a Mac server supporting both Windows and Mac clients. The administrator configures the server software with user information and sets variable access permissions through the User Manager utility. This utility is also where the administrator sets up the nodes (access lines) to the BBS, using either modem or TCP/IP access. Although the configuration dialogs are complex, the instructions in the manual are good enough that I was able to set up a BBS—with one modem node, one TCP/IP node, access to a file-download area, a new-uploads area, and two conferences—on a Power Mac 6100/66 in less than an hour. Once the BBS was configured, all I had to do was add new users and set permissions as needed.

But the true test of a BBS's utility is the user's experience with the client software. With the client and a TCP/IP or dial-up connection, users can chat, transfer files to and from the BBS, participate in discussions, use a Finger directory, send



The Welcome Mat Spider Island's own BBS shows off the TeleFinder client's graphical interface.

mail, and upload their own personal Web pages. I was able to create a personal Web site by simply dragging and dropping my HTML and image files into a folder. The server software supports CGIs in a sysop-controlled location, so users can't create CGI interactions that write to inappropriate sections of the Web site.

The Mac client interface, with its drag-and-drop support, feels a lot like the Finder. The Windows client isn't as nice, but Spider Island is releasing an updated client that it claims will bring the Windows client's features closer to the Macintosh version's. And since TeleFind-

er's client software is proprietary, your connection to the BBS isn't the same as a direct Internet connection: TeleFinder lacks outgoing TCP/IP connections to the Internet and support for some important Internet protocols, so you can't, for example, browse the Web or transfer files via FTP.

The Last Word

TeleFinder is good (if basic) Web software that's best suited to hosting users' personal pages. If your primary goal is to serve Web pages for a business, you'd do best to stick with dedicated server software. As a small business's Internet and intranet hub, however, TeleFinder is a great alternative to more closed systems such as FirstClass and CE Software's QuickMail.—MATTHEW HAWN

RATING: ★★★★★/7.2 **PROS:** Proprietary client is well integrated with Internet protocols. **CONS:** Client can't make TCP/IP connections to the Internet. **COMPANY:** Spider Island (714/453-8095, <http://www.spiderisland.com>). **LIST PRICE:** \$675.



ADOBE POSTSCRIPT RED.



Adobe PostScript

THE COLOR YOU WANT IS THE COLOR YOU DESERVE.
MAKE SURE YOUR PRINTER HAS ADOBE™ POSTSCRIPT™.

For more information, call 1-800-521-1976 ext. J1206. Or log on to <http://www.adobe.com/>

Adobe, PostScript, and the PostScript logo are trademarks of Adobe Systems Incorporated which may be registered in certain jurisdictions. ©1995 Adobe Systems Incorporated. All rights reserved.

Circle 251 on reader service card

MACWORLD August 1996 65

If you know how to use this stuff, you know how to use Ashlar DrawingBoard.

And you know why you need it.

IF YOU CAN AFFORD
ONE OF THESE,
YOU CAN AFFORD
DRAWINGBOARD
AT ONLY \$249.95

Ashlar DrawingBoard™, professional CAD software adapted for home and small business users, allows you to draw the way you're used to. Only easier.

Cabinetry & woodworking, mechanical & electrical, scale models, home & office layouts, landscape design, you name it. If you can do it on your drawing board, you can do it better on our DrawingBoard. No CAD system is easier to learn. And use.

And only DrawingBoard features Ashlar's patented Drafting Assistant™ that makes drawing easier, faster, and more precise. Especially when you need to make a change. Just as an example, you can forget about those meticulous calculations to determine relationships between shapes, center points, tangency, and so on. Drafting Assistant works the way you think. Only better.

DrawingBoard's extensive visual feedback makes it easy to draw with precision.

—Susan Glinert, *Computer Shopper*, April '96 issue (page 496)

If you're looking for an elegant, professional-quality drafting tool, DrawingBoard is a solid package. ★★★★★

—Peter Scisco, *Computer Life*, May '96 issue (page 108)



Visit our web site at:
www.drawingboard.com

**To order, call 1-800-206-4075.
Ask about our new promotional offer!**



IBM PC compatible 386DX/25 or better running Windows 3.1 (or Windows 95) or Macintosh IIci or better (including Power Macintosh)

System Requirements:

Math Coprocessor, CD ROM Drive (3.5" disks available),
Hard disk with at least 10MB of free space, 8MB RAM

LabView 4.0

THE BIGGEST AND BEST IN LAB SOFTWARE KEEPS GROWING

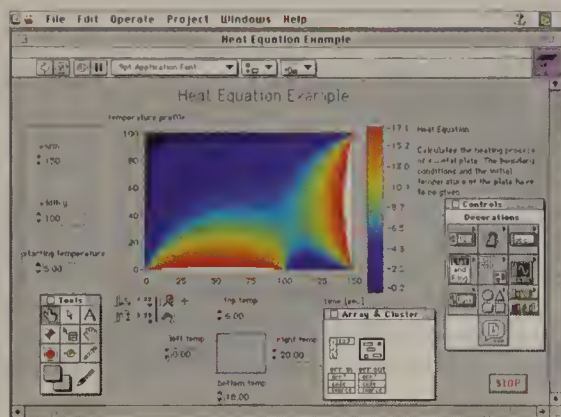
AT THE DAWN OF THE MAC ERA, National Instruments developed a complete software-based system that automates laboratory instrumentation and data acquisition. That took quite a leap of marketing faith—who could have foreseen that a computer whose main software offerings were MacWrite and MacPaint would someday be a major force in labs? That faith paid off; today the Macintosh is the most important platform in several scientific fields, including molecular biology and chemistry, and National Instruments' LabView is the dominant program for developing virtual instrumentation.

Not only is LabView the biggest of the lab software packages—the full Power Mac installation of version 4.0 needs 8MB of RAM and nearly 70MB of disk space—it's without question the most capable. With LabView and a data-acquisition card, your Mac can simulate any other lab information-gathering devices, from lock-in amplifiers to multichannel scopes to timers and controllers. And National Instruments has modernized the programming environment to look like a professional development package, arranging program sections hierarchically and adding dozens of aids for producing virtual instruments (VIs).

Although the amount of programming you now must do to implement specific VIs looks more daunting than in the last version, LabView 4.0's customizable floating palettes let you use existing VIs from the giant (300MB) library provided to create customized VIs to meet your lab's requirements (see "Post It!").

Amazingly, even with all the programming changes between versions 3.1 and 4.0, I was able to open and run all 18 items in my test suite of LabView 3.1 VI packages with no glitches (the cures for the few potential conversion problems are carefully explained in the documentation).

Version 4.0 resolves the odd printing bugs that plagued previous versions. Its graphing features rival those of dedicated scientific graphing programs, and tip messages appear like balloon help in little boxes near every important screen element. The Analysis library's math functions are now so comprehensive that you



Post It! From a LabView palette associated with a particular virtual instrument, you can pull out and pin sub-VIs to display the most-used elements on screen (the two rightmost palettes have been pinned).

could set up LabView to manage a modest magnetic-resonance imaging effort. And the new Profiler lets you track down time sinks in your LabView projects. For network-oriented projects that involve analyzing lots of data from multiple instruments, this capability is crucial.

My misgivings about version 4.0 have more to do with the inevitable consequences of LabView's relentless evolution than with flaws in the program. You can now do real project-based programming, as you would in C++, but it won't

be obvious to new users how to get a simple job—such as basic data logging—going quickly. Also, the days when a five-year-old Mac could serve as an inexpensive data recorder have ended with this release; a Mac IIx with 6MB of RAM is no longer a LabView-ready platform. The excellent tutorial helps remedy the first problem, and the increasing availability of inexpensive Performas with big hard drives will eventually rectify the second.

The Last Word

LabView dominates the Macintosh lab-software market the way Microsoft Excel dominates the Mac spreadsheet market. Despite increased complexity and hardware demands, LabView is indispensable for Mac-based laboratories.—CHARLES SEITER

RATING: ★★★★★/7.7 **PROS:** Huge library of virtual instruments; most customizable version yet; superior graphics and math capabilities. **CONS:** Requires serious commitment to training. **COMPANY:** National Instruments (512/794-0100, <http://www.natinst.com>). **LIST PRICE:** \$1995; upgrades \$295.



Adobe PostScript

SUPPORTS EVERY MAJOR COLOR STANDARD.
MAKE SURE YOUR PRINTER HAS ADOBE™ POSTSCRIPT™.

For more information, call 1-800-521-1976 ext. J1206. Or log on to <http://www.adobe.com/>

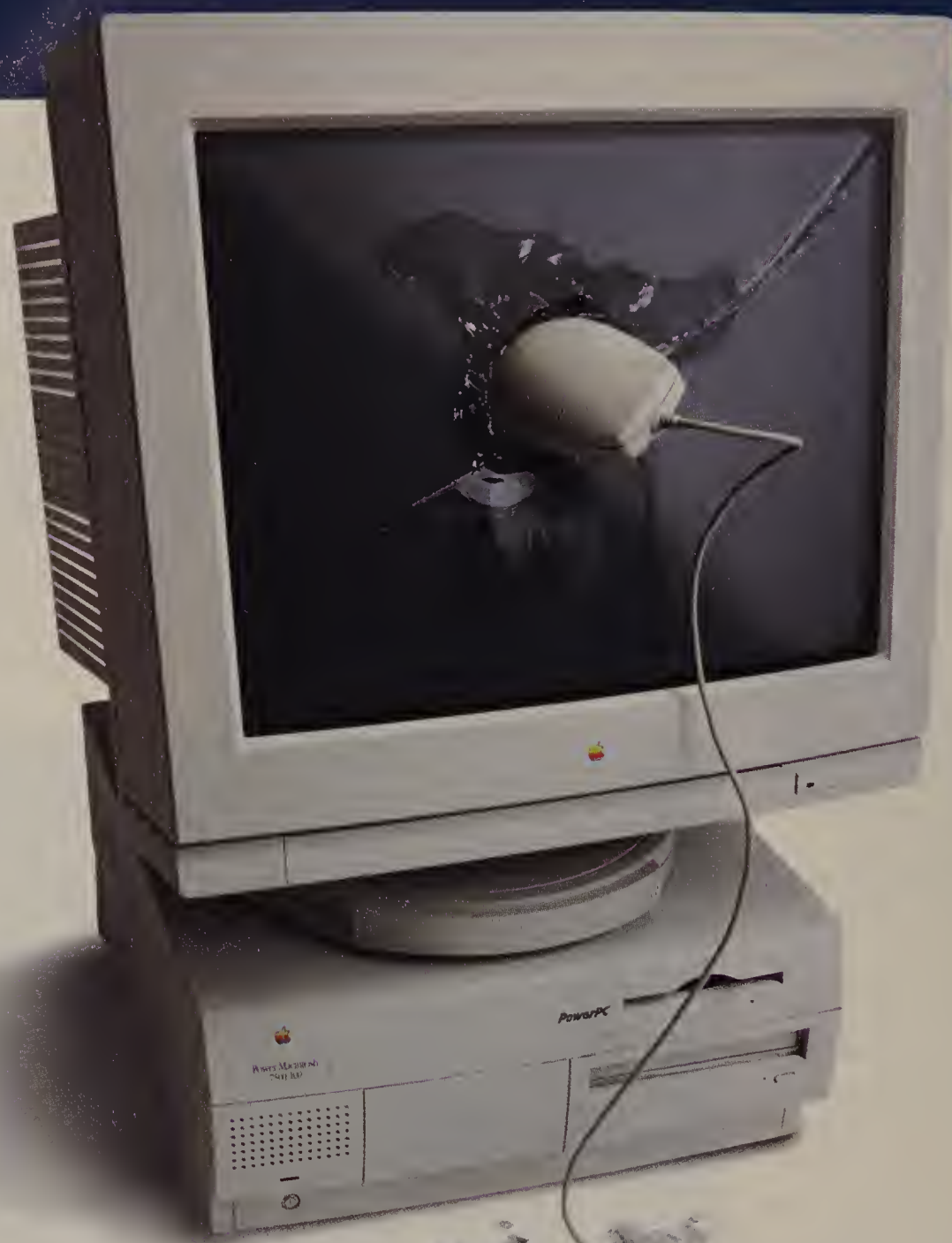
Adobe PostScript, and the PostScript logo are trademarks of Adobe Systems Incorporated which may be registered in certain jurisdictions. ©1995 Adobe Systems Incorporated. All rights reserved.

Circle 251 on reader service card

MACWORLD August 1996 67

To make sure they're highly-skilled,
we make our employees
pass an intense screening process.

(So intense it usually tells us more about those who fail.)



MacTemps is the only staffing agency that won't send you just anybody off the street. Because not everybody has the skills to pass our tests. We know Macintosh technology better than any other staffing agency. So we can thoroughly test our employees to make sure they have the skills you're looking for. Design and production on Quark XPress® and Photoshop™. Presentation graphics using PowerPoint® and Persuasion®. Multimedia using Director® and Premiere™. Not

to mention help desk and technical support. Our employees know it all. If they didn't, we wouldn't offer a 110% money-back guarantee. For a highly-skilled temporary or permanent employee, call 1-800-MACTEMPS. And we'll send you the ones who pass.

Offices in 24 U.S. cities,

London, Paris, and Melbourne.

MacTemps
1-800-MACTEMPS®

For some up-to-date job listings, visit our web site at <http://www.mactemps.com>.

Circle 60 on reader service card

NewsHopper 1.2

WELL-EQUIPPED USENET NEWS READER'S COMPETITION IS FREE

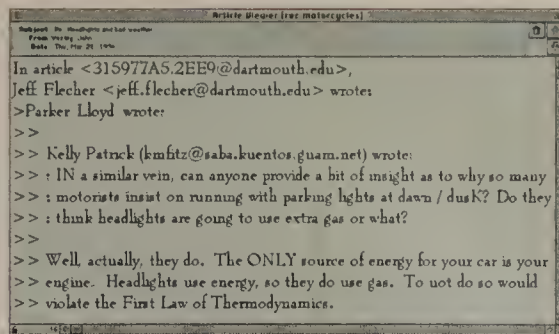
NEITHER CBS NOR HAM RADIO ever had it as good as the latest fad in long-distance communication with total strangers: Usenet newsgroups. While the World Wide Web continues to grab headlines, thousands of Net cruisers are also posting love letters, cries for help, and vicious flames to this loose network of discussion groups. LandWare's NewsHopper 1.2 is a well-equipped way to navigate this sea of text, and users who don't want to be tethered to a phone jack will welcome its advanced offline features. But desktop-based Usenet surfers may find both the hassle factor and the price a bit steep.

On your first connection to a news server, NewsHopper obtains a list of available newsgroups. You can scroll through it and highlight groups that interest you, or subscribe directly to a newsgroup by using the Subscribe command—such flexibility is typical of NewsHopper's design. Another convenient feature: you can subscribe and set the group preferences to several groups, all at once.

LandWare bills NewsHopper as an offline news reader, and most of its features are geared toward spending a minimum amount of time connected. For instance, NewsHopper's default setting retrieves only subjects and authors of articles on the first pass. Instead of maintaining a connection to the server and bringing up individual articles as you click on them, NewsHopper requires you to browse, marking the articles you want. When you're done, you request another connection, and NewsHopper collects the full text of the articles you've marked.

This sounds like a good idea, but it can end up being a lot of extra work; I generally downloaded entire newsgroups in a single pass just to avoid the hassle. Taking the easy way out, though, presented another problem: NewsHopper stores all retrieved articles in a single file. It's easy enough to compress the file and selectively purge old articles, but it's also easy to wind up with a multimegabyte file after just a few days of browsing.

Whether you're keeping an eye out for a favorite topic or just sick of suffering a Usenet fool gladly, you'll appreciate NewsHopper's robust filtering tools. The



The Daily News Want to read colorful and authoritative advice from complete strangers? NewsHopper helps you surf the Usenet newsgroups.

software will search an article's subject, header, author name, or body text for any text string; once it's found a match, NewsHopper will highlight or delete the article, as you desire. Useful as this tool is, I'd like to see an option to simply hide an article rather than delete it.

Though it's stable, NewsHopper has some minor but irritating interface problems. For instance, article text doesn't wrap in windows. Also, changing the font in an article changes the font in every article in every newsgroup, but changing the font in a window listing newsgroup threads only affects the threads in that newsgroup. Overall, the interface lacks

polish, tending toward cluttered dialog windows with lots of check boxes.

The Last Word

NewsHopper is the only stand-alone commercial news reader available for the Mac, but there are several high-quality freeware news readers available, including NewsWatcher, Nuntius, and YA-News-Watcher, which adds article-filtering capabilities to NewsWatcher (visit Macworld Online to find these programs). NewsHopper's efficient offline processing reduces connection time, but unless that's really important to you, or you live out of a PowerBook and don't want to be tied to a telephone line, NewsHopper doesn't offer enough additional functionality to warrant shelling out cash for a news reader.—CAMERON CROTTY

RATING: ★★ ★/5.1 **PROS:** Full-featured, extensive filtering capabilities; offline processing. **CONS:** Several freeware utilities offer nearly the same functions. **COMPANY:** LandWare (201/347-0031, <http://www.landware.com>). **COMPANY'S ESTIMATED PRICE:** \$59.



Adobe PostScript

FOR COLOR PRINTING, NOTHING COMES CLOSE.
MAKE SURE YOUR PRINTER HAS ADOBE™ POSTSCRIPT™.

For more information, call 1-800-521-1976 ext. J1206. Or log on to <http://www.adobe.com/>

Adobe, PostScript, and the PostScript logo are trademarks of Adobe Systems Incorporated which may be registered in certain jurisdictions. ©1995 Adobe Systems Incorporated. All rights reserved.

Circle 251 on reader service card

Still waiting for your scan or a courier?

This final art scanned in four minutes with the SprintScan 45.



IT'S 11:30 PM AND FINAL ART HAS TO SHIP.

You pick the best scan.

Imagine: high-quality, high-resolution scans in-house, in six minutes. That's final art from 4"x5" or 2-1/4" transparencies, even 35mm slides, right on your desktop. Say hello to the new SprintScan 45.

SPRINTSCAN 45

And say goodbye to couriers and waiting around. Find out more: call 1-800-816-2611, ext. 416 or visit www.polaroid.com. Unless you love working late.



Polaroid
Digital Imaging

PowerBuilder 4.0

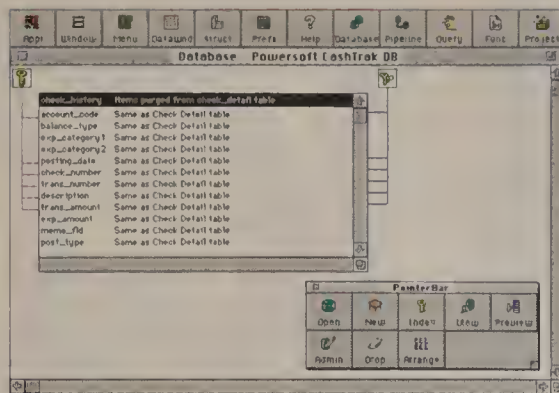
CROSS-PLATFORM DEVELOPMENT TOOL
COMES TO THE MAC AT LAST

POWERSOFT IS INDEED A POWER IN the client-server database business: less than a decade old, it's one of the most important vendors of database-access tools for large systems, and PowerBuilder is established in its position as leading object-oriented, front-end application-building software in competition with similar products from Oracle and Informix. Until now, PowerBuilder's function was connecting Windows and Unix clients to corporate database servers on minicomputer-based networks, but version 4.0 puts Macs on the networks.

PowerBuilder's first Mac version is an interesting product, even if it calls for a fairly non-Mac mindset: files, for example, always have eight-character names with three-letter extensions, such as *interfac.ini*. In the Powersoft vision of the world, your job is to make visual query tools for looking into massive sets of relationally linked data tables (see "Data Basics"); although the Watcom SQL database is included (as is the InfoMaker query tool and assorted middleware for connecting to specific popular databases) in the PowerBuilder package, it's mostly for show—your real data is presumed to reside in SQL databases developed over the years using other software.

Two elements dominate constructing a PowerBuilder interface: DataWindow objects, the key elements of your interaction with PowerBuilder; and Transaction objects, which communicate with Oracle or the other databases. PowerBuilder provides a good collection of icon-based, dialog-box-driven programming tools for creating these objects, as well as a tutorial library of examples (some quite funny, remarkably enough) for beginners. It's fairly straightforward to create database-query applications, at first using only a few objects, then adapting these to more sophisticated tasks later.

As long as you keep things relentlessly simple, everything works fine, but complex layouts can take so long to update, you begin to fear your Mac has crashed (I tested on a Power Macintosh, although PowerBuilder 4.0 is, alas, nonnative, 680X0 code). To make sure your Mac creations run on other platforms, you need



Data Basics You construct different interactive windows that constitute your application, mostly using this advanced DataWindows facility. Underlying everything is a set of basic data tables and relations, defined in a SQL database program.

to resist the temptation to add convenience touches with AppleScript.

A more serious problem is that the many data-handling features added by Windows developers using DDE (Dynamic Data Exchange) and OLE (Object Linking and Embedding) with PowerBuilder for Windows don't translate into anything on the Mac side, although Microsoft has clearly specified how this should be done (it's implemented in Fox-Pro, for example). In the corporate environment, these cross-platform mis-

matches will require programming workarounds. Nonetheless, it's possible to use PowerBuilder to make Macs effective client stations on a network with traditional SQL servers.

The Last Word

Like JAM 6 from JYACC (see *Reviews*, October 1995), PowerBuilder 4.0 offers one of the first paths for Macs to tap into the world of large-scale corporate relational databases. Despite a few flaws, its introduction is good news for database developers who want to expand the Mac's scope in large business environments. Version 5.0 has already been announced for later this year, and if Powersoft can work out the rough spots, PowerBuilder 5.0 promises to be a powerful cross-platform tool.—CHARLES SEITER

RATING: ★★ ★/6.4 **PROS:** Powerful, reliable tool set; builds Unix and Windows query tools, as well as Mac. **CONS:** Performance issues; some cross-platform glitches; not Power Mac native. **COMPANY:** Powersoft (508/287-1500, <http://www.powersoft.com>). **LIST PRICE:** \$3295.



Adobe PostScript

FOR COLOR PRINTING, NOTHING COMES CLOSE.
MAKE SURE YOUR PRINTER HAS ADOBE™ POSTSCRIPT™.

For more information, call 1-800-521-1976 ext. J1206. Or log on to <http://www.adobe.com/>

Adobe PostScript, and the PostScript logo are trademarks of Adobe Systems Incorporated which may be registered in certain jurisdictions. ©1995 Adobe Systems Incorporated. All rights reserved.

Circle 251 on reader service card

MACWORLD August 1996 71

It's Here!!!

THE \$99 RELATIONAL UPGRADE FOR FILEMAKER PRO.



JUST SOME OF THE NEW FEATURES

- RELATIONAL POWER
- ENHANCED SCRIPTMAKER®
- AUTO PHONE DIAL
- INTEGRATED MAIL MERGE
- LARGER FILE SIZE
- OPEN MORE FILES
- NEW TEMPLATE SOLUTIONS
- NATIVE POWER MAC™
- PARAGRAPH FORMATTING

Great news in the battle to be more productive: the revolutionary upgrade for the leading Macintosh® database is now shipping, complete with an arsenal of innovative features. "FileMaker® Pro 3.0

is the ultimate in relational databases and it makes great improvements over its worthy predecessors," says Mac Home

Journal (1/96). It "...puts all other Mac databases to shame," raves Small Business Computing Magazine (1/96). FileMaker Pro 3.0 only costs \$99 to upgrade or \$199 for the full product. So march on over to your nearest dealer, or just call

1-800-293-0617 ext. 995
to order direct*

CLARIS®

Simply Powerful Software™

*In Canada, please call 1-800-361-6075, ext. 141.

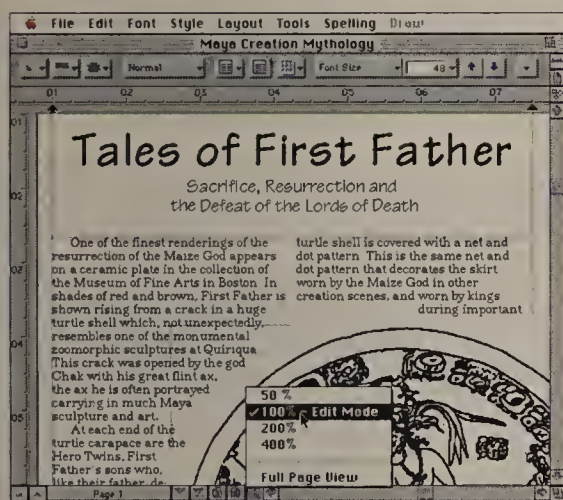
© 1996 Claris Corporation. All rights reserved. Claris, FileMaker and ScriptMaker are registered trademarks and Simply Powerful Software is a trademark of Claris Corporation in the U.S. and other countries. Macintosh is a registered trademark and Power Mac is a trademark of Apple Computer, Inc. in the U.S. and other countries. All other trademarks are property of their respective owners. Pricing reflects Claris' estimated retail price and actual price may vary.

WorldWrite 3.0

NEW WORD PROCESSOR IS PROMISING
BUT NOTHING TO WRITE HOME ABOUT

YOU HAVE TO ADMIRE A COMPANY that dares to introduce a word processor into a crowded and contentious Mac market. WorldSoft's WorldWrite, which has been available for several years outside the United States, has some innovations but ultimately falls well short of its claim to be "the word processor for Macintosh."

The first thing you notice about WorldWrite 3.0 is its clean, uncluttered interface. Small icons in the scroll bars flip pages, switch among four magnifications, and show and hide rulers and the



Clean Windows Most formatting commands are condensed into a single row of icons.

well-designed icon bar. Menus have been organized with care, and you can define a keyboard shortcut for any command.

The program also has strong writing and editing tools. Synonym searching and batch spelling checks are done via Casady & Greene's Thunder 7. You can copy any number of items to the Clipboard, and the program fully supports drag and drop. But WorldWrite lacks many related amenities: you can't undo drag and drops, the program doesn't remove extra spaces when you delete words, and it lacks multiple undos and automatic smart quotes.

The program's formatting capabilities are basically strong. You can specify any number of variable-width columns and change column formats anywhere on the page. Tables are easy to create, modify, and format and can occupy multiple pages. Typographic controls include tracking, word spacing, horizontal scaling, and baseline shift, and WorldWrite has both paragraph- and character-based

style sheets. But you can define style sheets only by example (with previously formatted text), and changing a style is even more awkward.

WorldWrite's support for long and complex documents is a mixed bag. Although you can enter footnotes and endnotes in the same document, both appear confusingly as superscript numbers. You can mark items for and compile a seven-level table of contents and a two-level index, but you can't use a style to automate marking either type of entry. Indeed, WorldWrite doesn't offer much in the way of office automation: it lacks AppleScript support, wizards, templates, a macro function, and automatic cross-referencing.

WorldWrite's page-layout skills are uneven as well. The program displays pages as they will appear when printed. Behind the text is a graphics layer; text can wrap around irregularly shaped graphics at a user-defined offset. Conveniently, the program lets you create master pages for repeating text and graphics, but to suppress items you have to cover them with opaque boxes. You can't divide a document into sections or adjust hyphenation, but you can print separations with crop and separation marks and import styled text into QuarkXPress.

WorldWrite's foreign-language skills rival those of the less user-friendly Nisus Writer; with an Apple Language Kit, WorldWrite can handle right-to-left and vertical scripts. On the other hand, it can't print envelopes, and its mail-merge function might have been state-of-the-art in 1988. Its RAM and hard drive requirements are exceeded only by Microsoft Word 6's. WorldWrite also has a distressing habit of crashing from time to time.

The Last Word

WorldWrite's well-designed interface and other strengths are appealing, but its many lapses and its unreliability are not. Unless you work with alphabets other than Roman, stick with WordPerfect or MacWrite Pro.—ROBERT C. ECKHARDT

RATING: ★★/4.0 **PROS:** Clean interface; character and paragraph styles; good table tools; strong foreign-language support; master pages. **CONS:** Antediluvian mail merge; many omissions; buggy. **COMPANY:** WorldSoft (801/350-9490, <http://www.worldsoft.com>). **LIST PRICE:** \$149.



YOU BOUGHT

A MACINTOSH TO

TAKE YOU TO

A HIGHER LEVEL.

NOW MAKE SURE

LOST WORK WON'T

RUIN THE TRIP.



Your Macintosh may be intuitive, but it can't detect trouble. Which is where the award-winning Norton Utilities™ 3.2 for Macintosh comes in.

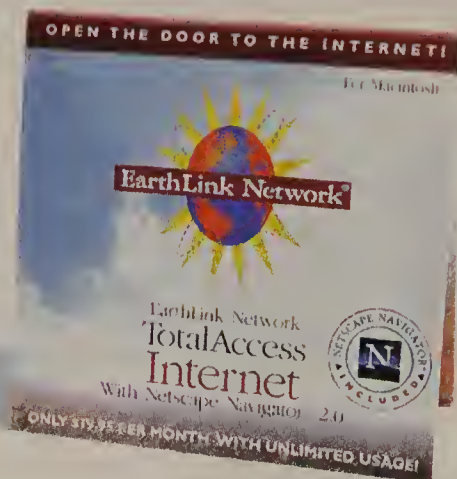
It scans automatically, finding and fixing problems before they escalate. It can suggest proactive disk maintenance for optimum performance. And should a major disaster ever occur, Norton Utilities will quickly restore all your data. Plus it's PowerMac native, too.

For more info, call 1-800-695-0679 ext. 9FF8, or visit us at www.symantec.com. And have a safe trip.

SYMANTEC.

Symantec is a registered trademark and Norton Utilities is a trademark of Symantec Corporation. Macintosh is a registered trademark of Apple Computer, Inc. ©1996 Symantec Corporation. All rights reserved.

Internet for Macintosh.
Install disks. Double click.



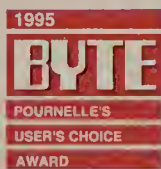
It's that simple.



The coolest, easiest Internet access on Earth.

\$19.95 per month.* Flat rate. Unlimited usage.
Call now for your free EarthLink Network TotalAccess™
with Netscape Navigator™ 2.0.

1-800-395-8425



Every account includes a FREE 2 meg Web site. Internet access in over 280 cities in the U.S. and Canada. Software for MACINTOSH, WINDOWS, WINDOWS 95, featuring Netscape Navigator 2.0. Earthlink Network is one of the largest Web space providers in the U.S. and also provides ISDN, Frame Relay, T1 and other Internet services. *There is a one-time set-up fee of \$25.00. Prices for Canada are different.

EarthLink Network, Inc. 3100 New York Drive, Suite 201, Pasadena, California 91107 Fax: (818) 296-2470.
Info via email: info@earthlink.net. Live human via email: sales@earthlink.net. Visit our Web site at <http://www.earthlink.net>



Copyright ©1996 EarthLink Network, Inc. All Rights Reserved. Trademarks are property of their respective owners. Netscape Communications, Netscape Navigator and the Netscape Communications logo are trademarks of Netscape Communications Corporation.

Circle 8 on reader service card

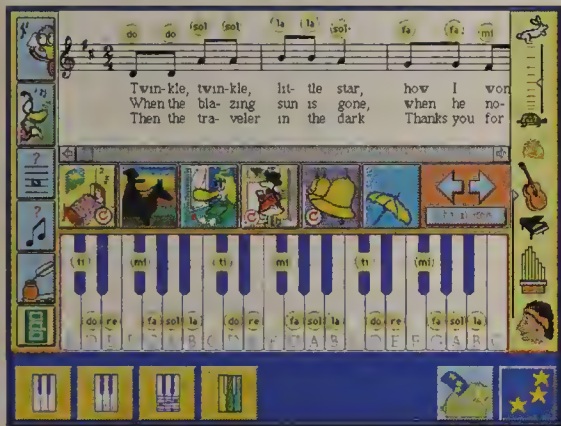
Children's Music Education

COMPETING PACKAGES ARE SHORT ON THEORY, LONG ON ENTERTAINMENT

AS A CHILD, I BECAME DISCOURAGED by a piano teacher whose unimaginative methods turned what should have been a joy into drudgery. Two new programs use engaging methods to introduce children to music with a playful touch, but neither can do the job alone.

Taking a straightforward approach, *A Little Kidmusic*—from Ars Nova, the maker of *Practica Musica*—presents a piano keyboard on screen that you can play using a MIDI keyboard or the Mac's keyboard or mouse.

A Little Kidmusic offers three different age-group settings: preschoolers, young readers, and ten-year-olds and up. All age groups can listen to and play songs, and the two older groups can learn



A Colorful Keyboard *A Little Kidmusic* lets you listen to, play, and record familiar children's songs from your Mac or a MIDI device.

pitch and rhythm. The writing tool—which lets you add harmony and record your own songs—is offered only for the oldest kids. You click on the appropriate icon for simulated guitar, piano, organ, and voice, and move a slider between a rabbit icon and a tortoise icon to change a song's tempo.

The program's large library of melodies should be familiar to kids; my seven-year-old daughter recognized most of them immediately. Another plus is its multiuser design geared for classrooms: you can designate a file server for the program and Kids folder (which holds individual students' and teachers' files), and an access path for locating them.

Codesigned by Theatrix Interactive with the renowned Juilliard School, *Juilliard Music Adventure* teaches basic music concepts—including rhythm, mel-

ody, and pitch—through an interactive adventure. Game play takes you into a medieval castle whose queen is held captive by an evil gnome named Gnoise. You solve musical riddles and win keys by choosing color-coded tiles that correspond to the correct notes; you need all of them to unlock the queen's throne room and set her free. You can also bypass the game and go straight to the Rhythm and Melody tools, but once you're there, using them is not intuitive.

My daughter and I earned all the keys but one; in the dragon's lair we seemed to be one note short of the complete tune, but none of the remaining tiles worked and the program offered no hints. And although we were usually able to identify the correct tiles by color, shape, and position, that approach didn't help us identify the musical notes they represented.

The Last Word

Of these two programs, *A Little Kidmusic* does a better job of covering the basics of music theory while maintaining a playful look that appeals to young kids. Don't expect it to teach them all they need to know about music, though; it might make a good supplement, but it won't replace formal musical instruction. *Juilliard Music Adventure*, on the other hand, misses the mark. Your kids may have fun with it, but they won't come away with a true understanding of music.—CATHY ABES

A Little Kidmusic

RATING: ★★ ★/5.3 **PROS:** Familiar songs; MIDI input and output support; multiuser design. **CONS:** Thin manual with minimal music textbook; limited range of instruments. **COMPANY:** Ars Nova (206/828-2711, <http://www.ars-nova.com>). **LIST PRICE:** \$75.

Juilliard Music Adventure

RATING: ★ ★/4.1 **PROS:** Wide range of instruments; color tiles and program hints help kids find the right notes. **CONS:** Poor documentation; confusing composition tools; no music theory instruction. **COMPANY:** Theatrix Interactive (510/658-2800). **LIST PRICE:** \$34.95.

HOW IRONIC.

YOUR MAC GETS A VIRUS

AND YOU'RE

THE ONE WHO GETS

VIOLENTLY ILL.

Be safe with constant protection from viruses with Symantec AntiVirus™ 4.0 for Macintosh (SAM™).

PowerMac native, SAM will scan every file, compressed or not. It'll stomp out viruses from floppies, Internet files, even your office e-mail. Only SAM users can set their Macintoshes to automatically update virus protection by connecting to our BBS site. Once your Mac is set, you won't have to worry.

Call 1-800-695-0679 ext. 9FF7, or visit our Web site at www.symantec.com. And stop viruses before they stop you.

SYMANTEC.

Symantec is a registered trademark and Symantec AntiVirus and SAM are trademarks of Symantec Corporation. Macintosh is a registered trademark of Apple Computer, Inc. ©1996 Symantec Corporation. All rights reserved.

see yourself

for who
you
really
are.

A.D.A.M.
At Home

A.D.A.M. The Inside Story

See yourself with A.D.A.M. The Inside Story.

Peel through over a hundred layers,
watch over four hours of animations, and
challenge what you've learned with puzzles.

When you're through, you may never look
at yourself the same way again.

CompUSA • Computer City • Egghead

©1996 A.D.A.M. Software, Inc. All rights reserved.

www.adam.com

1-800-408-ADAM

Circle 37 on reader service card

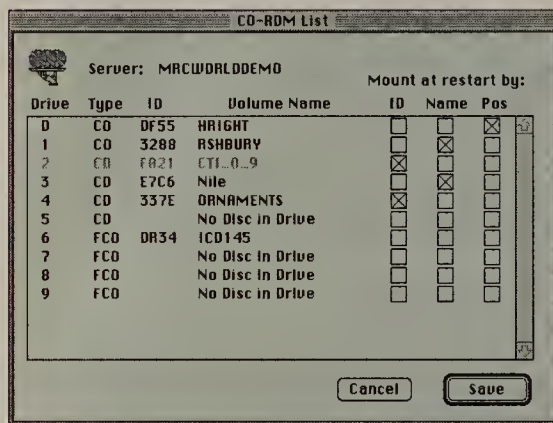
Reviews

LanCD 3.2

NETWORK CD-ROM CLIENT SOFTWARE
SUFFERS FROM DIFFICULT SETUP

AS A PART OF OUR DAY-TO-DAY work, *Macworld* editors frequently access Computer Select, a CD-ROM compilation of technology magazine articles. At an annual subscription cost of \$1250, buying a separate copy for each staff member could wreak havoc with the editorial budget.

Adding a multiuser CD-ROM drive or jukebox to your network is an easy solution to this type of dilemma, unless you need to accommodate both Macs and PCs; most network CD-ROM systems



Drive Time Clicking on the LanCD server icon in the Chooser brings up a list of accessible CD-ROMs. Discs already mounted—like the CTI Encyclopedia on this server—are grayed out.

are Novell NetWare-based and offer limited support for Macs. Version 3.2 of Logicaft's LanCD network-access software solves the mixed-environment problem for Macs on Ethernet TCP/IP networks, complete with support for the Mac's long file names and HFS discs.

I can't say this is an easy solution, however. I was eventually able to access CD-ROMs from my Mac using LanCD, but getting to that point was a baffling, frustrating experience that involved not only ignoring but contradicting instructions in the manual.

To test the client software, I connected a Power Mac 7100 to the Logicaft Optical Storage and Retrieval System, a \$20,988 Pentium-based server that incorporates six 4x CD drives and a 4.2GB hard drive. (This tower was a hassle: drive connections shook loose during shipment; easily lost ¼-inch screws hold the side panel in place; and its door opens to just shy of 90 degrees and kept banging my arm when I loaded the CD caddies.)

Installing the software took the patience of a saint and copious help from Logicaft technical support. First, the driver consistently refused to load. Next, the Network control panel had to be set to EtherTalk—simple enough. Unfortunately, in order to get the system running, I had to switch the control panel over to Ethernet (not EtherTalk) to modify the MacTCP Hosts file. The documentation insists that modifying the Hosts file is optional, and doesn't indicate what information needs to be inserted if you decide to invoke that option.

Luckily, things get easier from here. When you open the Chooser, the LanCD icon appears; clicking on it brings up a dialog box that asks you to type in the IP address of the server, which in turn leads to a dialog box where you select (or in the case of a single-server setup, verify) the file server.

Once you've selected your server, a list of the CDs loaded in the jukebox appears in order of volume name. As with any network volume, you can set the Mac to mount any or all of the CDs from the server automatically when you log on. You can determine the mounting order of a CD by its position in the server, its name, or its ID number (see "Drive Time"). In this way, you can always mount the most current version of periodical CDs (such as Computer Select) as long as the name remains the same.

The Last Word

Although I was disappointed by the contortions necessary to configure the server, it made reading CDs a dream once it was up and running. You probably won't want to tackle the daunting installation process without your network administrator, but all the CDs I tested—even home-brewed CD-R titles and a disc with no Macintosh installation instructions—played without a hitch. I even managed to run an application off a Mac-only CD, something that Logicaft doesn't recommend.—HOWARD BALDWIN

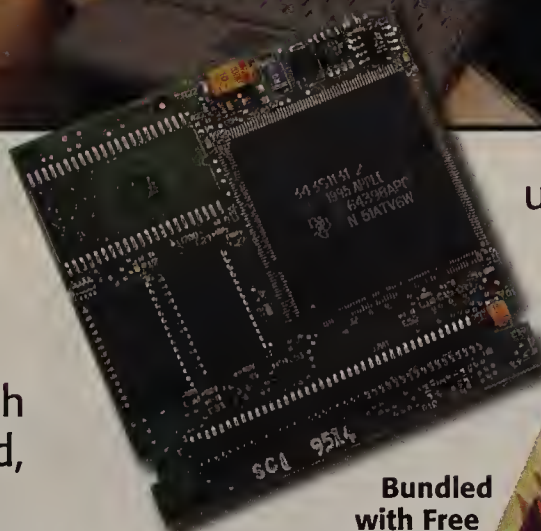
RATING: ★★ ★/5.2 **PROS:** Accesses network CDs as if they were in your own Mac's drive; supports long file names and HFS discs. **CONS:** Installation is a chore—keep your network expert handy. **COMPANY:** Logicaft (603/880-0300, <http://www.logicaft.com>). **LIST PRICE:** 10-user license \$695; 50-user license \$995.



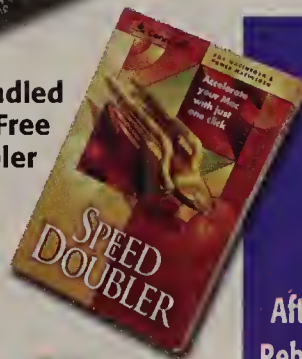
IT UPGRADES YOUR POWERBOOK® 500 TO POWERPC CLASS FOR PEANUTS.

If you're the proud owner of a Macintosh® PowerBook 500 Series laptop, fasten your seatbelt. Because Newer Technology is about to upgrade you all the way to a whopping 117 MHz, the PowerPC speed of the PowerBook 5300. For just a fraction of the going price of a new 5300.

How can we make an upgrade offer like this? With the **NUPower™** upgrade card, available in three RAM configurations: 0MB, 4MB, 8MB. It's a daughterboard that replaces the 040 CPU in your PowerBook with the new 603e chip that comes in the 5300. So you can upgrade to PowerPC performance and still take advantage of your built-in Ethernet and all the system upgrades you've already invested in – like memory, fax/modem and PC Cards.



Bundled
with Free
Speed Doubler



Plus, if you buy now, we'll give you a trade-in rebate of \$80 for your old 040 CPU

and throw in **Connectix® Speed Doubler™** free. Which will let you run your non-native applications at near PowerPC performance. So why not step up to PowerPC class? An

upgrade offer this good won't even look funny on your expense report.

**PRICES
STARTING AT
only \$590*.**

After \$80 Factory Direct Trade-In
Rebate on your old 040 processor.

**Plus
FREE Speed Doubler.**

* Prices after Trade-In Rebate

NUPower 117MHz	0MB	\$590
NUPower 117MHz	4MB	\$795
NUPower 117MHz	8MB	\$999

Offer expires June 30, 1996.

Newer®
TECHNOLOGY
WICHITA, KANSAS U.S.A.

INNOVATORS IN POWER & PERFORMANCE

PowerBook Upgrades • Docks • PC Cards
Memory Modules • Acceleration • Connectivity

1-800-678-3726

316-943-0222 • Fax: 316-943-0555

e-mail: sales@newertech.com

Website: <http://www.newertech.com>

MessagePad 130

NEWTON FINALLY DOES IT IN THE DARK

FOR MANY BUSINESSPEOPLE, THE Newton MessagePad is useful mainly as a device for scheduling, expense-report filing, and occasional note taking. But using a Newton without enough light is a strain on the eyes and sometimes is just plain impossible. With the MessagePad 130, Apple has finally fixed this problem with the obvious engineering solution: backlighting.

And it's great. Once you have the backlighting adjusted to your liking, you'll probably leave it on all the time—at least when your 130 is plugged in. Backlighting is energy intensive (the batteries run down about three times faster with it on), so the MessagePad 130 has software that lets you set backlighting on a timer. As an extra vision bonus in this model, Apple has switched to a more rugged, lower-glare surface.

Apple has recognized that personal digital assistants must have Internet and online-service access. Handling browsers for the World Wide Web and clients for America Online and CompuServe (CompuServe promises its client in May 1996) means it needs lots more memory, so the 130 has



KEVIN CANDLAND

2.5MB of RAM, enough to enable a more ambitious TCP/IP life, and 8MB of ROM that holds the expanded version of Newton Operating System 2.0.

Software tweaks include a Handwriting Instructor to help you get optimum results from the internal script recognizer (although Graffiti from Palm Computing [415/949-9560] is still a bit more accurate than the Newton's own software), and calendar/scheduling/list-management software that's

a serious improvement over earlier versions. However, the interface and backup software for both Windows and Mac is essentially unchanged. The 130 includes Pocket Quicken 1.2, which you can use to generate day-by-day Quicken expense reports of deductible activities. This function alone makes the Newton worth four stars to me; it does an excellent job at many necessary business tasks.

The Last Word This is still definitely a market-niche product; if your mobile computing requirements demand something smaller than a PowerBook, it's the best Mac-related PDA, but it's not to be confused with a full-function computer. Backlighting may be a simple addition, but it makes a big difference in usability, since on the road means in the dark a good part of the time. The 130's standard memory is also adequate to let it function as a respectable E-mail link with standard services. This link is essential for the Newton's continued viability.—CHARLES SEITER

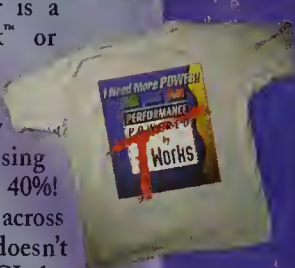
RATING: ★★★★★/7.0 **PROS:** Lighted screen; extra memory; minor software tweaks. **CONS:** Extensive use of backlighting shortens battery life. **COMPANY:** Apple Computer (408/996-1010, <http://www.apple.com>). **LIST PRICE:** \$695.

I Need More POWER!

Do you remember when your Power Mac™ thrilled you with its speed? Do you remember how you felt as faster and cheaper systems were released while you were still paying for yours? What if we told you that your Power Mac has always had the potential to run nearly as fast or faster than a new system?

The key to unlocking your Power Mac's hidden power is a Trinity Works PowerPak™ or PowerTrip™ CPU Booster. Starting under \$80, the Trinity CPU Boosters actually increase the CPU's processing speed in some machines up to 40%! This power increase is seen across the entire system and it doesn't require a PDS, NuBus™ or PCI slot. So when you find yourself screaming for more power, look to Trinity Works. We'll get your Mac screaming and you smiling.

With the purchase of a Trinity PowerPak™ or PowerTrip™, receive a \$10 rebate and a FREE T-Shirt!



Compatible Systems	CPU Speeds	
Performa 61xx & 6100/60	80	84
6100/66	80	84
7100/66	80	84
7100/80	80	93
8100/80	80	93
8100/100	100	126
Radius 81/110	110	135
7600/120	120	150
8500/120	120	145
9500/120	120	150
9500/132	132	165
8500/150	150	170
9500/150	150	170

Original CPU MHz Speed
CPU Boosted with:
Trinity PowerPak™ 61/80
P/N: 100-1200 (or w/256k Cache P/N: 1500-556)
Trinity PowerPak™ 71/80
P/N: 200-1200 (or w/256k Cache P/N: 1500-556)
Universal PowerPak™
P/N: 300-1200 (or w/256k Cache P/N: 1500-556)
Trinity PowerTrip™
P/N: 100-550 (or w/512k Cache P/N: 100-1650)

Get Even More Boost with a Certified L2 Cache Cord!



COMPUSA
1-800-COMPUSA
1-800-266-7872

COMPUTER CITY
1-800-THE-CITY

Distributed Through:
Tech Data



Trinity Works, Inc.

Productivity Enhancement Hardware

www.trinityworks.com • 12201 Technology Blvd., Suite 145, Austin, Texas 78727 • (512)249-1099 • FAX (512)249-0570

©1996 Trinity Works, Inc. The Trinity PowerPak, PowerTrip, and the Trinity Works logos are trademarks of Trinity Works, Inc. All other trademarks and registered trademarks are used for reference purposes only and do not constitute an endorsement by the company.

To Receive the rebate and T-Shirt, clip this Ad and send it in with your receipt and registration card



Warning: prices on other full-bleed 11x17 laser printers might lead to severe shock.

The hot look of full-bleed graphics and typeset quality resolution. The electrifying ability to print your own posters, four-page brochures, and flyers in-house.

With the lightning speed and the convenience of a desktop laser.

No wonder today's large-format laser printers can give you a warm feeling. Plug in the prices, though, and things can get a little *too* warm.

Everything's cool when you fire up a QMS® 1660E Print System, however.

In a flash, everyone on your network—using any platform or protocol—can produce unparalleled text and graphic output, thanks to 1200 dpi resolution. 11" x 17" full-bleed coverage. And 16ppm rated print speed. Yet the price starts at a stone-cold \$3999*.

So the choice is yours. Toast yourself to a great buy from QMS. Or just toast yourself.



**The QMS® 1660E Print System.
Big. Bold. Beautiful.**

Call now for a reseller near you.

US: 800 392-7559 Dept. 5133 Canada: 800 268-0343 Internet: <http://www.qms.com/>
For service on QMS or other products, call 800 762-8894 • Q-Fax 800 633-7213

* QMS Reference Price. QMS and the QMS logo are registered trademarks of QMS Inc., One Magnum Pass, Mobile AL 36618, 334 633-4300 • ©1996 QMS Inc.

Circle 288 on reader service card

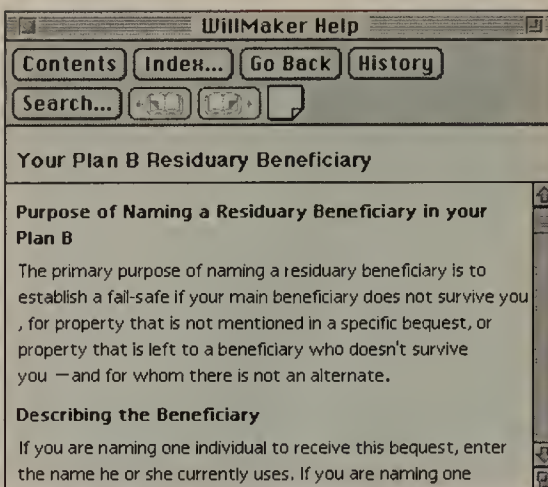
WillMaker 6.0

COMMONSENSE LEGAL GUIDE MAKES WRITING YOUR WILL EASY

CONSIDER YOURSELF FOREWARNED. With Nolo Press's WillMaker 6.0, you've run out of excuses for not writing a will, health-care directive, or final-arrangement document.

Let's start with the classic excuse, "It's too complicated." Thanks to WillMaker's easy-to-follow, personal interview format, that excuse hasn't worked in years. In WillMaker 6.0, Nolo has added an online legal manual, making the question-and-answer process even easier. Whenever you're puzzled about the ramifications of a choice, you can click on the More Information button; in a separate window, the context-sensitive legal guide offers an explanation of the subject at hand.

Unlike most legal guides, WillMaker is easy to understand and marked by the kind of commonsense advice you'd want from an attorney. For instance, you might want to have your ashes flung off the local bridge. The legal guide reminds us, however, that "there are some local laws controlling scattering that may thwart your wishes." However, the guide also adds that "in reality,



Lawyer in a Box WillMaker 6.0's new online legal guide offers context-sensitive help.

these laws are very difficult to enforce if the scattering is done privately and quietly."

Next, consider the shopworn "Writing a will takes too long" excuse. WillMaker 6.0's interface improvements make the process so straightforward, I was able to complete a relatively basic will, health-care directive, and final-wishes document in less than two hours.

Expense is another habitual excuse for not writing a will. While going to an attorney might cost you thousands, WillMaker's list price has remained steady at \$69.95.

While you should see a lawyer for complicated wills and documents, WillMaker

6.0's enhancements will do the job for most people. The new "pot trust" option, for instance, lets you leave property in one trust for all your children and direct a trustee to distribute the money according to each child's situation. You can now make an unlimited number of bequests. And version 6.0 lets you name coexecutors for your will.

WillMaker 6.0 could stand some tweaking. Early in the will interview process, you create a list of names (complete with contact information) for designating beneficiaries and executors. Adding a name to the list later, though, is curiously awkward, and the list is linked only to the wills component. Also, version 6.0 won't import wills created in WillMaker 5.0.

The Last Word WillMaker 6.0's inconveniences aren't major—and they certainly aren't big enough to classify as excuses. If you need to write a will, health-care directive, or final-arrangement document, WillMaker is an easy, straightforward way to get the job done.—JAMES A. MARTIN

RATING: ★★★★★/8.1 **PROS:** Straightforward; excellent online help. **CONS:** Can't convert WillMaker 5.0 wills; name list linked only to wills. **COMPANY:** Nolo Press (510/549-1976, <http://www.nolo.com>). **LIST PRICE:** \$69.95.

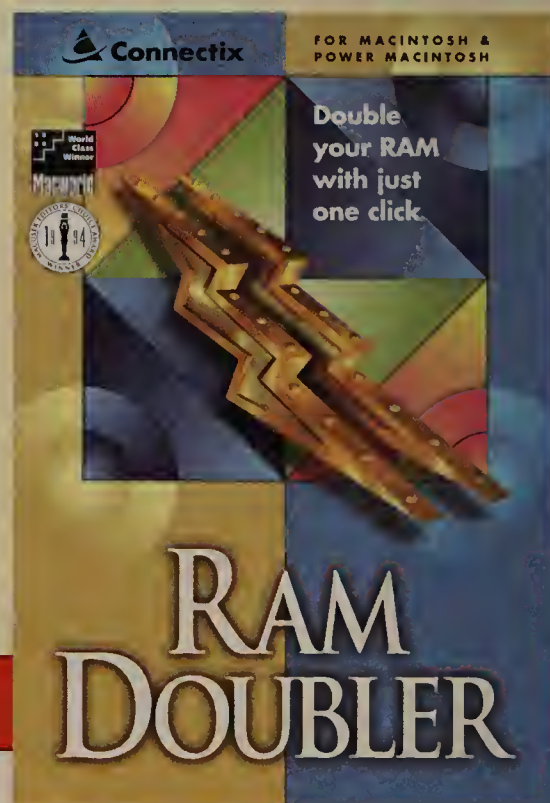
What Do You Say When You're Out Of Memory?

I need RAM Doubler.

The more memory your Mac has, the more productive you'll be. But forget about adding SIMMs. RAM Doubler™ is software that doubles your Mac's memory. RAM Doubler *does what it says it will do.*~Macworld. And you don't have to open your Mac. Just run RAM Doubler's 15 second installation and you can run twice as many applications – instantly. *May well be the best investment you make this year.*~MacUser. You'll agree. Buy RAM Doubler today and double your RAM with one click. Your satisfaction is guaranteed. RAM Doubler is available wherever great software is sold.



System Requirements: Macintosh equipped with a 68030, 68040 or PowerPC microprocessor. System 6.05 or later, including all versions of system 7 • 4 MBs required (hard disk required for machines with 4 to 6 MBs) • Not compatible with Mac SE, original Mac Classic, original Mac LC or PowerBook 100 or Mac II without a 68851 PMMU or any accelerator that does not work with virtual memory.



© 1995 Connectix Corporation. 2655 Campus Drive, San Mateo, CA 94403 USA. 800-839-3629 • 415-571-5100 • FAX: 415-571-5195
EMAIL: info@connectix.com • RAM Doubler is a trademark of Connectix Corporation. All other trademarks are the property of their respective holders.

Circle 192 on reader service card

The New Spreadsheet That's So Simple— It's Revolutionary!



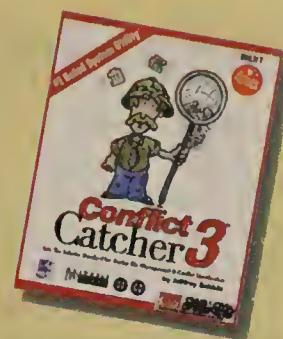
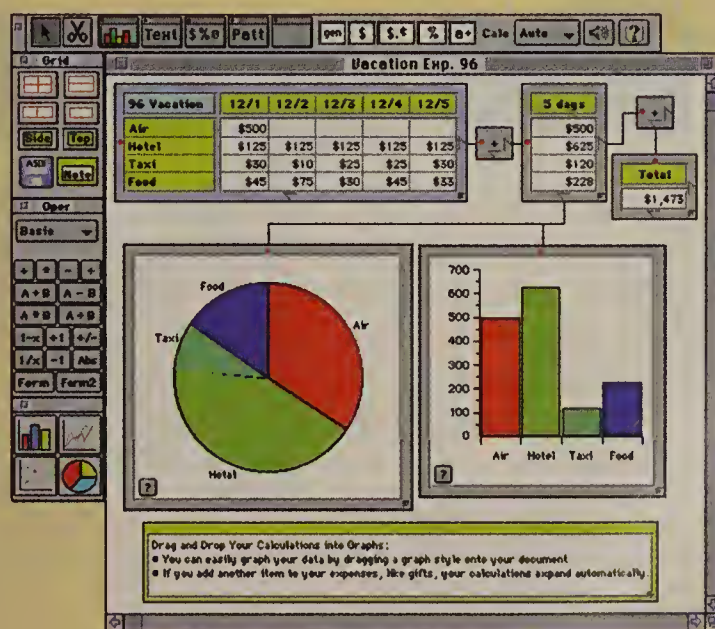
LET'S Keep It Simple Spreadsheet™

It's Easy!

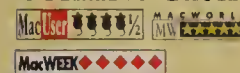
- Drag & drop your calculations!
- Lets you see your work — no more confusing formulas!
- Cuts down on user errors
- Add charts, graphs, text & graphics with a few clicks

It's Powerful!

- Supports Basic & Advanced Math Functions, Logic, Scientific Functions, Statistics, Trigonometry...
- Plug your numbers into ready-made solutions for business, home & school
- Build custom formulas for re-use



Conflict Catcher™ 3



Sets the industry standard for start up file management and conflict identification.



Spell Catcher™

New interactive spell-checker (formerly Thunder 7™) that even works on e-mail!



InfoGenie™ 2

Get organized! The fastest and easiest way to store and find information!



Snap Mail™ 2



E-mail that is easy-to-install, easy-to-use and half the price of other e-mail!



Kiss overblown spreadsheets goodbye!

Sales: 1-800-359-4920 • FAX: 1-800-359-4264 •
Tech: 408-484-9228

www.casadyg.com

Bartlett's Familiar Quotations

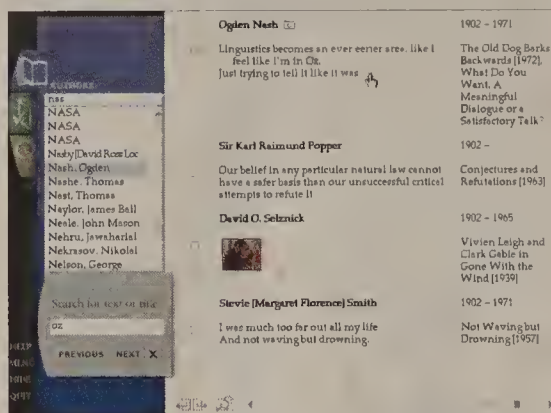
CD-ROM PROVES YOU CAN TEACH AN OLD REFERENCE NEW TRICKS

BY NECESSITY, BY PROCLIVITY, AND by delight, we all quote" (Ralph Waldo Emerson, 1876), and Bartlett's Familiar Quotations, Expanded Multimedia Edition, makes finding good quotations a whole lot easier.

Containing all 20,000-plus quotations from the 16th edition of the familiar reference, Bartlett's sports an elegant, easy-to-read design. The entry point is the Quotations window, which displays a column of chronologically arranged quotes and an alphabetical list of more than 2500 authors (see "You Can Quote Me").

The Media Timeline window lists more than 400 images, plus sound and video clips, also in chronological order. You can zero in on a date or just scroll up or down the years. Click on any thumbnail to see a full-screen (occasionally muddy) image, listen to a speech or music clip, or watch a video.

The Select Quotations window is the primary search area. Here you can specify a topic, author, keyword, original source, and date. The program displays the quotations it finds and marks them; however, it doesn't highlight words found in keyword



You Can Quote Me Casual browsers can scroll through Bartlett's Familiar Quotations or type part or all of a name to jump to a specific author.

searches, nor does it tell you how many quotations it has located (to help you decide whether to narrow the search). If you want to do a Boolean search (to find both *king* and *queen* in the same quotation, for example), search titles by something other than the exact title, or search for several specific dates, you must use the Quotations window's Find command, which can locate only one quotation at a time. And search results can be unreliable: a source search for *Wiz-*

ard of Oz, The Wonderful came up empty-handed even though there were in fact three qualifying quotations from the book, and a Find for the year 1542 turned up Sir Walter Raleigh, who wasn't born until 1552.

Although the program ran extremely fast on my Power Mac 7500, it gobbled up an extravagant 6.6MB of hard-drive space. I'm also unimpressed by the awkward, non-Mac-style scroll bars; the grayed-out list items that can in fact be selected; and Bartlett's tendency to make the menu bar disappear if you fail to use the Hide button.

The Last Word The multimedia edition of Bartlett's Familiar Quotations is more efficient and easier to use than the version Winston Churchill called "an admirable work." I do hope the publisher will clean up the program's flaws; in the meantime, we can still enjoy better access to the contents of this classic reference than we've ever had before.—ROBERT C. ECKHARDT

RATING: ★★/6.8 **PROS:** Fast, both browsable and searchable. **CONS:** Awkward, unreliable search engine; inconvenient, nonstandard interface elements. **COMPANY:** Time Warner Electronic Publishing (212/522-0680, <http://pathfinder.com/twep/products/>). **COMPANY'S ESTIMATED PRICE:** \$39.95.

Break the speed limit.

Break the speed limit on your Mac with Speed Doubler™. It's software that installs in seconds, requires no hardware upgrades and takes your Mac to the next level of performance. You get faster access to the data you use most. Faster disk access. Faster Finder performance. And check this: Speed Doubler automatically doubles the emulation speed on Power Macs.

With Speed Doubler, Power Macs instantly run non-native applications twice as fast! For instance, recalculate a 5000 cell Excel 4.0

spreadsheet with Speed Doubler in 6 seconds, without it...13 seconds. Run a summary calculation of 1500 FileMaker Pro records in 90 seconds instead of 3 minutes. It's not magic. It's Connectix Speed Doubler. And if you own a Power Mac, you gotta have it. Get Speed Doubler today wherever fine computer products are sold. Your satisfaction is guaranteed.



Requirements: Macintosh equipped with a PowerPC, 68040, or 68030 microprocessor • System 7.0 or greater • 8 MB physical RAM or greater • Compatible with Connectix RAM Doubler • Not compatible with: Mac Plus, Mac SE, original Mac Classic, original Mac LC or PowerBook 100

© 1995 Connectix Corporation. 2655 Campus Drive, San Mateo, CA 94403 USA • 800-839-3629 • 415-571-5100 • FAX: 415-571-5195 • EMAIL: info@connectix.com
Speed Doubler and RAM Doubler are trademarks of Connectix Corporation. All other trademarks are the property of their respective holders.

Circle 193 on reader service card

Macworld

Subscriber Courtesy Voucher

As a new subscriber, you are entitled to receive a full year of Macworld for 60% less than the annual cover price of \$59.40. BONUS

GIFT: Our 2 exclusive David Pogue Premium Utilities Disks contain 14 of the most powerful, time-saving, fun-to-use utilities ever authored! Send for your 2 FREE Utilities disks now!

Please Check:

☐ 12 issues/\$24.00.
Bill me later.

Name _____
Company _____
Address _____
City, State, Zip _____
E-Mail _____

Savings Statement

Annual Cover Price

\$59.40

Regular Subscription Price

\$30.00

Your Special Rate

\$24.00

Bonus Gift

2 Utilities Disks

Allow 4 to 6 weeks for delivery. For Mexican and Canadian subscriptions, please add \$18 per year for shipping. Add \$70 annually for all other foreign countries.

4EKFO

**Rush my
FREE Premium
Utilities Disks!**



NO POSTAGE
NECESSARY
IF MAILED IN THE
UNITED STATES

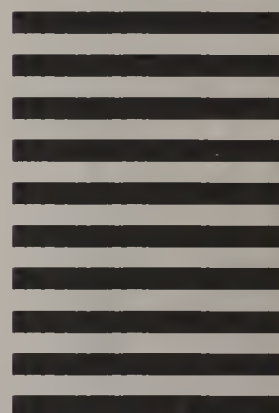
BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 1167 BOULDER, CO

POSTAGE WILL BE PAID BY ADDRESSEE

Macworld

SUBSCRIPTION DEPARTMENT
P.O. BOX 51666
BOULDER, CO 80323-1666



Dramatica Writer's Dream Kit 1.7

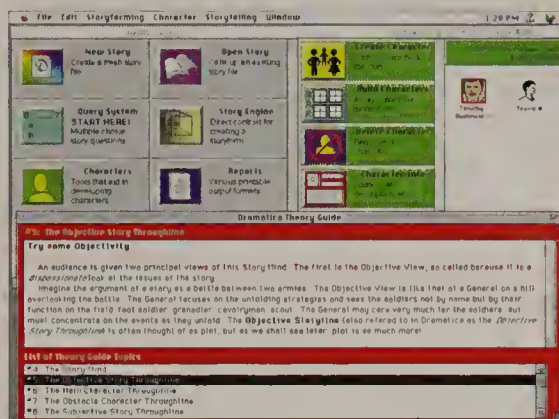
POWERFUL WRITER-ASSISTANCE SOFTWARE REFINES YOUR FICTION

SCREENPLAY SYSTEMS' DRAMATICA Writer's Dream Kit gives writers feedback and direction while they flesh out a story idea. If you provide the tale, Dream Kit will help you bulletproof it, through an amazing software-driven short course in narrative theory.

Dramatica's well-written documentation breaks creative writing into three phases: Storyforming, defining theme and conflict; Storyencoding, explaining character motivation and plot points; and Storyweaving, sketching out actual scenes. The software guides you through the first two phases but strangely leaves you to fill out paper forms—by hand—in the final phase.

Seven buttons on Dream Kit's main screen access its helpful tools, including the Query System, a database of story structures; the Theory Guide, an online help system about story concepts; the Story Engine, a single-page form to track your story's main elements; the Characters tool; and the Reports, text files based on your input.

Dream Kit's powerful Query System uses the Socratic method, asking you multiple-choice and short-essay questions to



Finding the Deep Structure The Dramatica theory explains the concepts of themes and motivations.

push you down the creative road. You start with 32,768 possible story structures. Answering somewhat abstract questions, such as, "In your story do: actions force decisions or decisions force actions?" helps you narrow your story down to a single structure. I was both annoyed and enlightened by the unusual approach. Dream Kit forces you to consider your story from a fundamental narrative level and makes you think more, not less, about what you write.

Clicking through the questions is easy,

and Dream Kit supplies helpful definitions, theory explanations, and specific examples from ten famous works, including *Hamlet* and *Star Wars*. After 12 initial questions, Dream Kit generates a series of reports on characters, plot, and themes, which you can print or export to text files. Dream Kit modifies the reports on the fly when you make changes. As you continue with 50 follow-up short-essay questions, Dream Kit adds your input to the reports.

Dream Kit has some drawbacks. Handwriting the forms for the final story-weaving phase is annoying. The database of story structures is versatile but generic, and can leave you staring at puzzling feedback.

The Last Word Nonetheless, Dream Kit blows away the competition in price and power. Most writer-assistance software is \$300 or more, but Dream Kit delivers for an affordable \$149. And it takes much less time to use than getting a master's degree in creative writing.—DEAN ANDREWS

RATING: ★★ ★/6.9 **PROS:** Powerful query engine; low price; easy to learn and use. **CONS:** Software assistance ends too early; reports can be too abstract. **COMPANY:** Screenplay Systems (818/843-6557, <http://www.well.com/user/dramatic/>). **LIST PRICE:** \$149.

If Your Idea of Networking is, "Here's my card," Move On to Another Ad.

If you want to do some serious networking, you and your staff should **Network Edition** be faxing special announcements, brochures, even order forms to all your top prospects and clients. Instantly. With FAXstf™ 3.3 Network Edition, it's even better than sending the originals.

3.3 Network lets your whole office fax through a non-dedicated server. It faxes directly from any application and receives right to your staff's Macs. FAXstf utilizes superior grayscale capabilities to transmit the highest-



quality faxes you've ever seen. And it organizes everything in the background, so your staff can move on to other tasks.

We'll be networking at Macworld Boston. Drop in and see us.

Which means that FAXstf helps you reach your most profitable network of opportunities quickly and effectively.

And, if you must, you can fax your card, too.

FAXstf

The Fax of Better Business

MacWAREHOUSE
1-800-255-6227



ZFTX661

1-800-880-9522

©1996 STF Technologies, Inc. FAXstf is a trademark of STF Technologies, Inc. All rights reserved. Macintosh is a registered trademark of Apple Computer, Inc. All other product and company names and logos are trademarks of their respective owners.

Circle 80 on reader service card

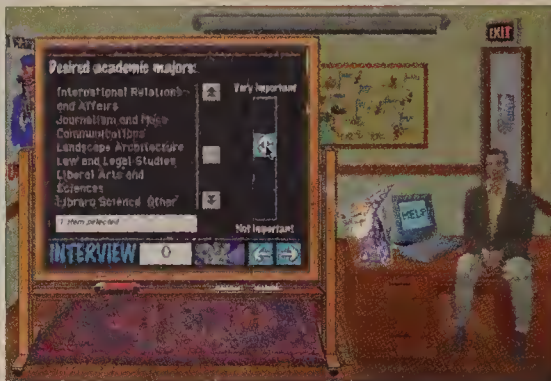
College Advisor

HELP WITH ONE OF LIFE'S BIG CHOICES

CHOOSING A COLLEGE ISN'T EASY. The choice has lifelong consequences, and the number of options can be overwhelming. The Princeton Review's College Advisor presents information from *The Guide to the Best 309 Colleges*, *The Big Book of Colleges*, and *The Guide to Paying for College* on a CD-ROM, making it easier to select a school and to map out a strategy for getting there.

A cartoonish counselor's office contains clickable items that open different modules of the program. Some of the picture links have obvious meanings—a computer with "Help" scrawled on the screen provides assistance—but others are less clear. Fortunately, a live-action college admissions counselor guides you through the program.

You click on the picture of the wizard to start your interview, where you answer a series of questions about yourself, your academic history, and the criteria important to you in your college choice (see "The Wizard's Interview"). Based on your answers, the program calculates your numerical "competitiveness rating," which is used with your answers to questions about college cri-



The Wizard's Interview The admissions wizard assesses your competitiveness rating and compiles a list of schools that meet your needs.

teria to generate a "hot list" of likely colleges. You can read about the recommended schools by clicking on their names. Many schools' listings include subjective opinions written by actual students to supplement the hard data.

If you're serious about a school, you'll want more information—and more current information—than a CD-ROM can provide. College Advisor comes with Netscape Navigator and Internet access software, so you can jump directly to the Web pages of schools that interest you. (If you already have Web access, the program works with most service providers.)

You can delete schools from your hot list and add schools not originally chosen

by the program. A search tool allows you to find additional schools by specifying matching criteria. You can also browse the complete alphabetical list, comparing your competitiveness rating with selected schools.

Of course, choosing a college is just one step in the complex process of preparing for a college education. The road-map module walks you through the complete process, starting in your junior year of high school. Each step is clearly explained, and the program allows you to record your progress.

The Last Word As a high school senior and his father, we've been working our way down the college-selection path using the traditional methods: books and hearsay. This program could have saved us lots of time and effort if it had been available a year earlier. A good deal of CD-ROM software seems overpriced when compared with books and other information sources. Priced under \$20, College Advisor is a tremendous bargain.—GEORGE AND BEN BEEKMAN

RATING: ★★★★★/7.1 **PROS:** Inexpensive; useful information; direct Internet access. **CONS:** Juvenile and slightly confusing interface. **COMPANY:** Princeton Review Publishing (617/272-7027, <http://www.review.com>). **LIST PRICE:** \$19.95.

New Color QuickCam - 16 Million Colors At Your Fingertips!

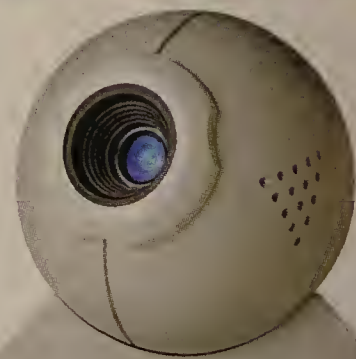
Be Colorful!

Color QuickCam™ includes everything you need for brilliant color pictures and video with your Mac. Plug it in, install the software and you're ready to rock. Great for fun at home, projects at work -- even send pictures over the net. Let your imagination go wild. Works with all QuickTime™ compatible software and on all QuickTime compatible Macs, including PowerBooks®. It's easy, fun, and your satisfaction is guaranteed. Color QuickCam is under \$200*. B&W QuickCam is under \$100. Find both where fine computer products are sold.

Call 1-800-839-3629 or visit our site at www.connectix.com.

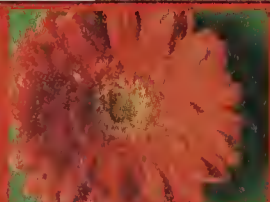
 **Connectix**

*After \$30 rebate



 Connectix

Color QuickCam
Now Shipping!



Make Movies



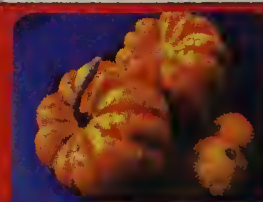
Video Conference



Take Fun Pictures



Inventory Valuables



Be Creative

© 1996 Connectix Corporation. 2655 Campus Drive, San Mateo, CA 94403 USA • 415-571-5100 • FAX: 415-571-5195 • EMAIL: info@connectix.com
QuickCam is a trademark of Connectix Corporation. QuickTime and PowerBook are registered trademarks of Apple Computer, Inc. All other trademarks are the property of their respective holders.

Circle 191 on reader service card



It faithfully took you to
the mall, the drive-in and
the office. But now it's

time to part. And the sooner you can sell, the sooner you can buy. So you post an ad
with a picture file on the Internet. To make sure everyone can see how beautiful your

baby is, you scan the photo with your Agfa scanner. It captures the color perfectly and

the detail impeccably. Which is why you also use it to scan in the map that's going to

make your international sales report look

like gangbusters. Who knows? It could

help you get one of those executive

parking spaces for your new baby.



the new
AudioScan II si.



every scan is important.
complete with Adobe
p* LF, OmniPage Direct®
software and Agfa FotoFlavor™
management software on
CD-ROM. For the dealer nearest
1 800-685-4271 ext. 3043.

Agfa rhombus are registered
Agfa Gevaert AG. OmniPage Direct
trademark of Caere Corporation.

Circle 158 on reader service card

AGFA 

The complete picture.™

Final Effects AP

ADD COOL VIDEO EFFECTS
TO ADOBE PREMIERE

METATOOLS' FINAL EFFECTS AP is set to do for Adobe Premiere what its KPT Final Effects did for Adobe After Effects—for hundreds of dollars less. Final Effects AP is a collection of 16 transition and filter plug-ins for Premiere, the most popular video-editing program in the Macintosh world. (It also works with programs that fully support Premiere plug-ins.)

Final Effects AP's modules install in Premiere's plug-ins folder and weave themselves into the Premiere interface. You get four transition effects: two wipes stretch the video in track A while gradually revealing the video in track B; another twists track A like a piece of toffee while revealing track B; and the fourth peels away track A to reveal track B. Not only is this page peel much more attractive than Premiere's, but it lets you specify more peel directions.

The 12 filters in Final Effects AP distort video tracks and add other special effects. The Rain and Snow filters simulate precipitation; the Sphere filter projects an image onto a sphere whose surface proper-



Premiere Effects Final Effects AP's filter dialog boxes let you change the way a filter is applied over time. Here, I added a keyframe that will change the direction of the raindrops.

ties and illumination you control; the Scatterize filter creates an exploding image; the Flo Motion filter sucks images into a digital black hole; the Pixel Polly filter creates a shattering-glass effect; and a sophisticated particle generator creates everything from starbursts to bubbles to flames. You can also animate the effects over time by creating keyframes in the filter's dialog box (see "Premiere Effects"). With the snow filter, for example, you can create gentle flurries that evolve into a windblown blizzard.

One of the beauties of Adobe After

Effects is the control it gives you over effects: you can specify numeric values for filter settings, for example, and adjust the way a filter evolves by drawing Bézier curves. This control extends to third-party modules like KPT Final Effects. Because Adobe Premiere doesn't provide this fine control, neither does Final Effects AP. However, you can specify that an effect evolve in a linear fashion or begin and end gradually, or you can use the Bézier option to create a less dramatic effect (though you can't edit the curve as in After Effects).

The Last Word With Final Effects AP, MetaTools has made the renowned image quality of KPT Final Effects accessible to Premiere users. If you do most of your work in Adobe Premiere or a program that's compatible with Premiere plug-ins—and you can't justify the expense of After Effects and KPT Final Effects—you won't find a higher-quality collection of transitions and filters for your money.—JIM HEID

RATING: ★★★★★/8.3 **PROS:** Excellent rendering quality; well integrated into Premiere; useful effects. **CONS:** No numeric control over effects parameters. **COMPANY:** MetaTools (805/566-6200, <http://www.metatools.com>). **LIST PRICE:** \$199.

INTRODUCING NOW UTILITIES 6.0

YOU'RE PERFECTLY HAPPY
WITH YOUR MAC.
NOW BE PERFECTLY HAPPIER.



With Now Utilities new Version 6.0, using and customizing your Mac has never been easier.

Version 6.0 finds and opens files faster. It helps you view and manage folders. It launches applications. It tracks down system conflicts and recovers work that would otherwise be lost in a crash.

We've added three brand new components to award-winning Now Utilities: Now AutoType™ automatically generates frequently typed words and phrases with a single keystroke. Now Tabs™ frees up your desktop by turning windows

"NOW UTILITIES
IS THE BEST
OVERALL
COLLECTION OF
UTILITIES
YOU CAN BUY
FOR YOUR MAC."

MACUSER

into tabs that appear at the bottom of the screen. And with Now Shortcuts™ you can perform repetitive tasks, such as duplicating files, sharing folders and creating aliases with just a mouse click and hot key combination.

To learn more about Now Utilities, or to see version 6.0 in action, simply download a demo by visiting our Web site at <http://www.nowsoft.com>. And see how much easier using your Mac can be. (Current users can upgrade now for only \$29.95. Just call us today at 1-800-416-5977.)

**Now
Software**



©1996 Now Software, Inc. and Now Utilities. The Now Software logo, Now Tabs, Now AutoType, Now Shortcuts and Now Utilities are trademarks of Now Software, Inc. All rights reserved.



Visit our Web site at <http://www.nowsoft.com> to download our free 30-day trial version. Or call 1-800-393-0667 for info.

Circle 56 on reader service card

FREE

Guide to evaluating
statistical software

Answer your tough questions quickly and easily.

Accelerated for
Power Macintosh

☐ **YES**, send more information on how **SPSS® 6.1 for the Macintosh®** can help answer my tough questions quickly and easily.

☐ **YES**, please send me the **FREE GUIDE** to evaluating statistical software.

1. Do you own a Power Macintosh? (circle one) YES NO RAM: _____ If no, Mac model: _____ RAM: _____

2. Do you analyze data now? YES NO If yes, what software do you use? _____

3. Do you currently use a statistical package? YES NO If yes, which one? _____

Name _____ Title _____

Department _____ Organization _____

Address _____ Floor/Suite _____

City _____ State _____ ZIP _____

Phone () _____ Fax () _____ E-mail _____

SPSS 6.1 for the Macintosh



Printed in the U.S.A. © Copyright 1996 SPSS Inc. 2/96 A9952



Mac OS

SPSS
Real Stats. Real Easy.™

OFFER EXPIRES 3/31/1997

Visit our site on the World Wide Web. Point your browser to <http://www.spss.com>



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES



BUSINESS REPLY MAIL

FIRST CLASS MAIL PERMIT NO. 73917 CHICAGO, IL

POSTAGE WILL BE PAID BY ADDRESSEE



Attn: Marketing Services Department
444 North Michigan Avenue
Chicago, Illinois 60611-9686



SPSS® 6.1 for the Macintosh® Real Stats. Real Easy.

Accelerated
for the Power
Mac!

Use SPSS 6.1 for the Macintosh when you need in-depth answers quickly and easily. Go beyond summary statistics and spreadsheet row-and-column math by using the right tool for the job. SPSS is a complete tool kit of statistics, graphs and reports that enables you to answer tough questions like:

- Why did sales drop in the last quarter?
- How satisfied are my customers?
- What are the patterns in my data?

SPSS products are used today for:

Survey research

- Explore consumer awareness
- Compare perceptions of products
- Discover preferences by group

Marketing and sales analysis

- Analyze your customer database
- Forecast sales by product and region
- Improve mailing responses
- Determine which promotions work best

Quality improvement

- Assess process capability
- Reduce nonconformance
- Spot unnatural patterns of variation
- Track incidence of infection

Research of all types

- Test hypotheses
- Determine group differences
- Track performance over time
- Prepare professional reports

Answer your tough questions

From the most basic to the most in-depth analysis, SPSS 6.1 for the Macintosh gives you a wide range of statistics. Use procedures from counts and crosstabs to regression, factor, Kaplan-Meier plus over 60 more! SPSS gives you all the statistics you need to answer your tough questions.

All statistics are in organized, easy-to-use menus and dialog boxes. Get up and running quickly with the online tutorial. Task-oriented help and a statistical glossary guide novices and experts alike.

See your results clearly and pinpoint your answers easily with 50+ fully-integrated, high-resolution charts.

Take advantage of System 7 features such as Apple® Events, Balloon Help™ and AppleScript™ support.

Working with SPSS couldn't be easier. Call today to find out how to answer your tough questions every day with SPSS 6.1 for the Macintosh!

Get a great value – order now!

1 (800) 457-8287

Fax 1 (800) 841-0064

Our WWW site <http://www.spss.com>

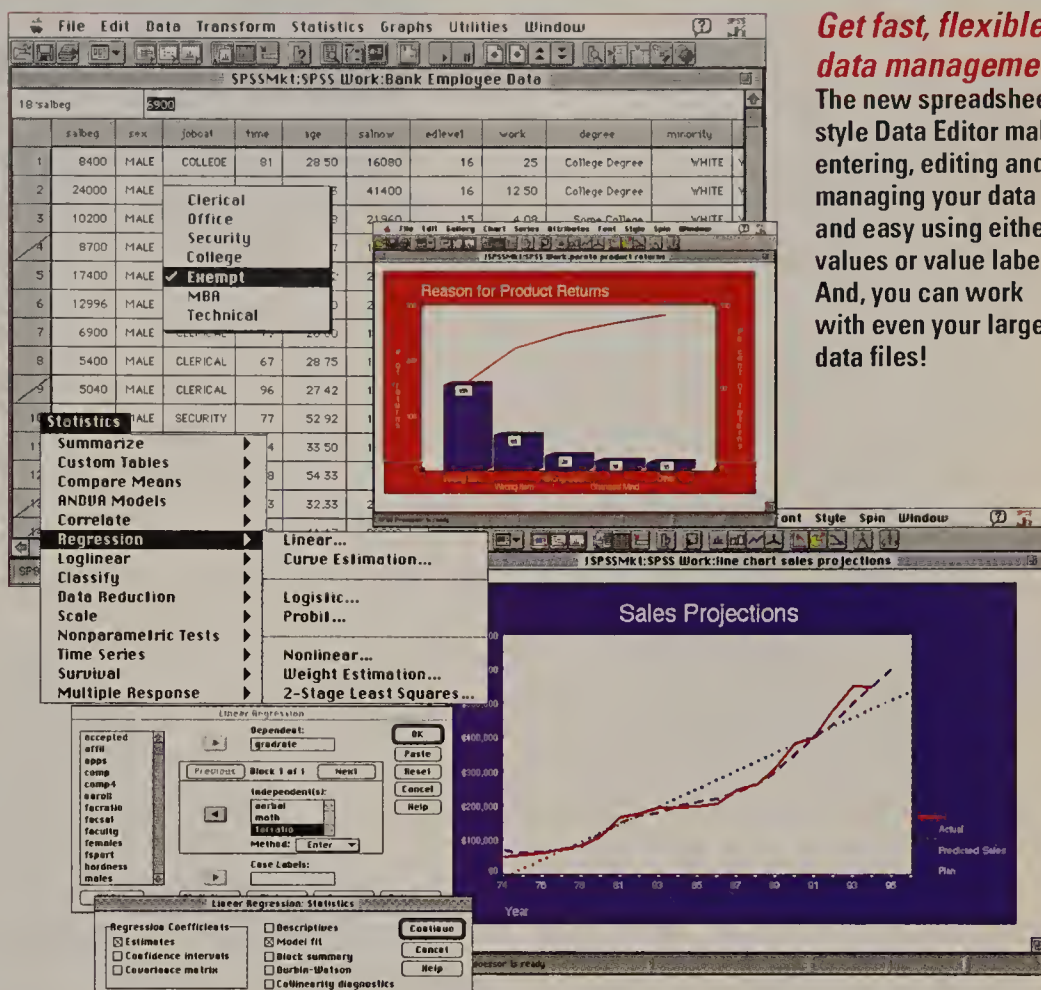
Circle 85 on reader service card

Get answers to tough questions using in-depth statistics!

Work with 60+ statistical procedures from basics such as counts and crosstabs to more sophisticated statistics including factor, regression and logistic regression.

Work faster with an all new Macintosh interface!

Learn faster using an online tutorial and speed up analysis with task-oriented help, a statistical glossary and a new toolbar. Plus, all statistics are located in organized, convenient menus and dialog boxes for fast access without having to type commands!



Get fast, flexible data management!
The new spreadsheet-style Data Editor makes entering, editing and managing your data fast and easy using either values or value labels. And, you can work with even your largest data files!

See your results quickly and clearly!

Use 50+ integrated, high-resolution charts and graphs. Choose from business, statistical and SQC charts. All charts can be fully edited with point-and-click accuracy through tear-off menus and palettes.

Take a closer look at SPSS 6.1 for the Macintosh:

- All new Macintosh interface
- 60+ statistical procedures – from the most basic to the most advanced
- Work with even your largest data files
- 50+ integrated, high-resolution business, statistical and quality charts with automatic labels, including: Bar, Area, Pie, High-Low-Close, Histograms, Scatterplots, Boxplots, Error bars, Pareto, X-bar, Range, Autocorrelation Plots and many more
- Create labeled charts automatically as part of SPSS' powerful statistical routines
- Choose the right chart with the SPSS' Chart Advisor
- Toolbar with one-button access to statistics, commonly used functions and results.

- Plus, with the Dialog Box Recall button, SPSS remembers your last 12 steps making it fast and easy to do ad hoc or refine analyses
- Supports Apple® Events required suite
- Quickly build error-free production jobs from SPSS dialog boxes or type commands using our command language. Use AppleScript™ to run your production jobs unattended
- Hot buttons between graphs and numerical output
- New spreadsheet-style Data Editor makes it easy for you to enter, edit, browse and manage your data. Display values as labels or as numbers
- Option-click any variable cell to see a pop-up menu of value labels

- Save time by defining templates for variable definitions you use frequently
- Identify individual cases in scatterplots and boxplots and see related cases highlighted in the Data Editor
- ODBC database access
- Access files in other applications through Easy Open translators
- Complete report writer
- Online tutorial with step-by-step instructions and system overview
- Task-oriented help system
- Glossary of statistical terms
- Documentation that clearly explains statistics
- Technical support for statistical and operational help

- Explore data more thoroughly with factor, cluster, discriminant analysis and more with SPSS Professional Statistics™
- Execute advanced multivariate techniques such as Cox regression, Kaplan-Meier estimation, logistic regression and more with SPSS Advanced Statistics™
- Create customized tabular reports with SPSS Tables™
- Predict the future using advanced time-series analysis in SPSS Trends™
- Perform perceptual mapping, conjoint analysis and optimal scaling procedures with SPSS Categories®



Mac OS



Get a great value – order now!

Call 1 (800) 457-8287

Fax 1 (800) 841-0064

or mail to: SPSS Inc.
444 North Michigan Avenue
Chicago, IL 60611

American Express, Discover, MasterCard,
VISA and I.M.P.A.C. cards accepted

Name	_____
Title	_____
Organization	_____
Address	_____
City	_____
State	_____
ZIP	_____
E-mail	_____
Phone number ()	_____
Fax number ()	_____

Try SPSS 6.1 for the Macintosh with our unconditional, 60-day money-back guarantee.

(U.S. and Canada only)

A8287

SPSS
Real Stats. Real Easy.™

Chicago • Washington, D.C. • Boulogne • Chertsey • Gonnchem • Madrid • Munich • New Delhi • Singapore • Stockholm • Sydney • Tokyo • And distributors worldwide

KPT Cool Effects

"KAI'S POWER TOOLS LITE" AT A BARGAIN PRICE

MAYBE YOU DON'T CONSIDER yourself enough of an image-editing power user to justify a \$199 investment in Kai's Power Tools 3.0. If you work with any digital photography at all, however, you owe it to yourself to check out MetaTools' KPT Cool Effects. This collection of 21 filters from Kai's Power Tools 2.1 is designed to complement Adobe's consumer-oriented PhotoDeluxe (see *Reviews*, April 1996), which already includes 5 KPT Cool Effects filters. Nevertheless, these plug-ins are also fully compatible with Adobe Photoshop.

KPT Cool Effects is like background music for your digital photographs. Even if you have little technical knowledge, you can give your images dramatically different moods by applying various filters. With just a few mouse-clicks, for example, I gave a photo of a vintage Corvette a soft, warm look (with Gaussian Glow) and then a highly charged look (Gaussian Electrify) before settling on a somewhat tattered look (Gaussian Weave). Creating a sense of motion was easy with Pixelbreeze (see "The



The Pixelbreeze in Your Hair KPT Cool Effects' Pixelbreeze option, applied to the right half of this image, gives the illusion of motion.

Pixelbreeze in Your Hair"), though I could also have applied Pixelwind or Pixelstorm.

A few Cool Effects are almost applications in themselves. The most useful of these extensions, Gradient Designer, lets you create an infinite number of custom fills and apply them to any selected area of your image (though I found it most suitable for text). When I was creating some artwork for an Internet company, for example, I used Gradient Designer to give the text a metallic look. Had I been working on a piece for an antique store, I could have chosen a wood-grain fill. Gradient Designer comes with more than 200 predefined fills, and you

can create and save new ones to use later on other images.

Not every Cool Effect will make your A-list. I found 3D Stereo Noise to be one of the less appealing filters; it supposedly converts your image into one of those 3-D stereograms that make you cross-eyed trying to find the hidden image. I've never been able to see those images in the first place, so I can't attest to this filter's effectiveness. Even if it works flawlessly, though, I can't see myself ever using it.

The Last Word By simply repackaging an old version of an existing product, MetaTools won't win any awards for originality. On the other hand, offering some of the best of Kai's Power Tools at a fraction of the cost scores high on the bang-for-your-buck scale. If you don't own Kai's Power Tools, KPT Cool Effects is definitely worth the \$29. Just be aware that the documentation, already on the sparse side, is written for PhotoDeluxe users.—JOHN SAN FILIPPO

RATING: ★★★/6.9 **PROS:** Useful, professional-quality image-editing tools; inexpensive. **CONS:** Documentation is light and geared toward PhotoDeluxe users. **COMPANY:** MetaTools (805/566-6200, <http://www.metatools.com>). **LIST PRICE:** \$29.

Connections

IDEAS AND ENTERTAINMENT LINK UP

JAMES BURKE HAS MADE A CAREER of showing us how seemingly unrelated ideas are interconnected throughout history. In his lively television programs he follows convoluted paths to show, for example, how a chain of unlikely events led from the invention of carbon paper to today's television sets. Over the years Burke has spun a gigantic web of inter-related ideas—a web that seems an ideal candidate for an interactive multimedia exposition. We can envision spending hours following our curiosity through a hypermedia reference featuring clips from the *Connections* TV series.

The *Connections* CD-ROM isn't a hypermedia reference, though; it's an exploratory adventure in the tradition of *Myst*. When you launch the program, you find yourself stranded in a visually rich 3-D environment. As you navigate this artificial world, you gradually discover clues that help you understand your goal: to battle the forces of chaos and save the universe by uncovering hidden links in history.

The comic-book plot seems a bit silly, but it's an interesting device for tying



Watt's Up? You need to help James Watt solve a problem with his piston before you can add another link to your chain of ideas.

together dozens of perplexing puzzles and logic conundrums with snapshots of the history of ideas. As you explore *Connections*, time and space are twisted so that nearly every scene is filled with anachronisms. Early in the game you visit a medieval pharmacy next door to a television repair shop; both stores offer the tools and clues you need to help James Watt invent the piston (see "Watt's Up?").

The pharmacist, the TV repairer, James Watt, and other characters are played by live actors who are smoothly integrated into the artificial landscape. The acting is sometimes corny and distracting; the most satisfying character is Burke himself, who pops

up occasionally to comment on your progress. Burke also appears in fascinating video segments that explain the historical connections between the objects you uncover on your journey. Each key object forms another link in a chain of ideas; completing the chain advances you to the next level—and a new set of puzzles.

A number of the puzzles seem obscure and nearly impossible to solve without help. Fortunately, assistance is always just a mouse-click away. A generous hint can almost always get you out of trouble, even if you're a puzzle-game novice. (If you lack willpower, you can disable the hint option at the beginning of the game.)

The Last Word As an interactive story, *Connections* doesn't hold a candle to the best of the genre, and it isn't the best choice if you're looking for an educational tutorial. But *Connections* does an admirable job of bridging the worlds of ideas and entertainment.—GEORGE AND BEN BEEKMAN

RATING: ★★★★/7.2 **PROS:** Frequently challenging; hint system included; informative video clips. **CONS:** Weak story line; some puzzles are frustrating and obscure. **COMPANY:** Discovery Channel Multimedia (301/986-0444, <http://www.discovery.com>). **LIST PRICE:** \$49.95.

The New Casio Digital Camera. Pretty amazing...no matter how you look at it.



The new Casio QV-10A *plus* Digital Camera might just change the way you take and display your pictures. Because until now, digital cameras were bulky and expensive. The QV-10A *plus* is anything but.



Using it is simple. With its LCD screen you see your pictures instantly. With the touch of a button you can delete images you don't want or display one, four or nine shots at a time in the camera or on a TV. It can even send images from the computer back to the camera, so it's perfect for presentations.



And with the QV software, you can easily add photos to documents and e-mail. Plus with the Adobe PhotoDeluxe™ software that's included, you can even customize your photos. Now it doesn't take a PhD to use a digital camera. All it takes is the Casio QV-10A *plus*.

And that's just the beginning.



CASIO®
capture. create. communicate.

96 Digital Pictures. LCD Color Display. Instant Viewing.

Adobe
PhotoDeluxe
1.0

Visit us at <http://www.casio-usa.com>

Popular Science

**BEST OF WHAT'S
NEW
1995
AWARDS**

Removable one-gig disks,
unlimited space,
fast as a hard drive.

The cat

can rip it up.

For the nearest dealer, call:
800-818-9728, ext. j07
Or see us at: www.iomega.com



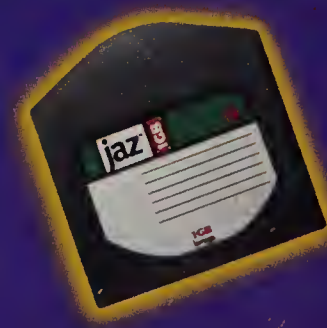
No matter how jazzy your presentation, the Jaz™ drive can handle it: graphics, sound, video, the works. Just connect it to your Mac or PC and its one-gig cartridges can store all your stuff. And it's so fast, you can present right off it. Let me tell you, the cat's got stage presence.

jaz



The Unlimited Personal Hard Drive.

Endless storage space.
Load and edit projects instantly.
Goes anywhere you go.



1GB disks for \$99.95.

Compact one gigabyte cartridges.
Great for graphics, sound, and video.
Portable files. Fast, easy backup.

BECAUSE IT'S YOUR STUFF.
Circle 76 on reader service card





Fig 2

Horizon

FIVE RASHMENTS OCH ARK

Light
COLOR
NSA

Rotote H
Rotote V
Rotote Z

The Mac's 3-D Edge

QuickDraw 3D will change

how you create graphics,

play games,

and surf the Web

THE MAC OS HAS ENTERED THE THIRD DIMENSION.

Apple's QuickDraw 3D technology promises to do for 3-D what QuickTime did for video—make it ubiquitous, consistent, and available not only to a small group of specialists, but to everyone.

For artists, designers, and engineers, QuickDraw 3D promises faster, easier-to-use 3-D modeling, rendering, and computer-aided design (CAD) programs. For World Wide Web surfers, QuickDraw 3D may lead to 3-D Web sites that provide richer details than found in today's 3-D sites. For thrill seekers, QuickDraw 3D enables games that can induce motion sickness. For publishers, QuickDraw 3D makes possible a new breed of clip art that lets you change viewing angles, textures, and lighting. Finally, for anyone curious about computer graphics, QuickDraw 3D makes it easy and inexpensive to test the waters of high-octane 3-D.

QuickDraw 3D isn't an application program. It's a system extension that lays a foun-

dation upon which software developers can build software with 3-D graphics features. QuickDraw 3D works on any PowerPC-equipped Mac, including 680X0 models containing PowerPC upgrade cards. (QuickDraw 3D will not run on straight 680X0 Macs.) The software requires System 7.1.2 or later and at least 16MB of memory. As I'll describe below, a version for Microsoft Windows is scheduled to be available by the time you read this.

Today, QuickDraw 3D is in its primordial phase: developer support is spotty and even erratic. But support is building steadily, and no one is questioning QuickDraw 3D's future—every developer I talked to praised the technology and hailed Apple's efforts to release it for both Mac and Windows platforms.

In this technology overview, I detail QuickDraw 3D's benefits and the state of QuickDraw 3D support today. I also describe some QuickDraw 3D accelerator cards that promise to boost performance and add imaging features. Macworld Lab tested three currently shipping cards and found that QuickDraw 3D acceleration hasn't yet reached its stride



BY JIM HEID

(see the sidebar "QuickDraw 3D Accelerators: Not So Quick on the Draw").

What QuickDraw 3D Promises

Outstanding 3-D programs have been available for the Macintosh for years—so who needs a system extension for 3-D? To answer that, let's look at the state of 3-D today and at how QuickDraw 3D promises to change it.

A Standard File Format

Every 3-D program uses its own file format, and exchanging 3-D scenes and models is cumbersome at best. Most 3-D programs support a cross-platform interchange format called DXF (short for Drawing Interchange File), but the DXF specification is designed

to be a least-common-denominator format: it preserves only model shapes, not appearances. QuickDraw 3D provides a standard file format, called 3DMF (short for 3-D metafile), that can describe all aspects of an object or scene: its components, lighting, texture maps, cameras, and so on (for definitions of these and other 3-D terms, see the diagram "Apple's Standards Make 3-D Graphics Simpler"). 3DMF files also tend to be much smaller than their DXF counterparts—an attribute that Apple is hoping will help make 3DMF a standard format for the World Wide Web.

QuickDraw 3D's 3DMF support extends to the Clipboard and Scrapbook, letting

you cut and paste—even drag and drop—models between QuickDraw 3D programs.

System-Level Rendering

Every 3-D program must contain its own software for rendering (the time-intensive process of adding shading, textures, and lighting to a scene). QuickDraw 3D provides a system-level renderer—and one that works in real time, at that. QuickDraw 3D's stock renderer doesn't provide the kind of photo-realistic rendering required by 3-D professionals, but it's adequate for games, CAD software, and draft views of scenes.

And QuickDraw 3D's rendering features are extensible: you can add more-sophisticated types of rendering with third-party renderers. A new

renderer is available for any program that uses QuickDraw 3D to render. I'll detail more aspects of QuickDraw 3D's extensibility later.

A Standard User Interface

Every 3-D program provides its own user interface for manipulating objects: rotating them, resizing them, and moving them within a scene. Letting users easily manipulate three-dimensional objects that appear on a two-dimensional screen requires creative user-interface design—and some developers are more creative than others.

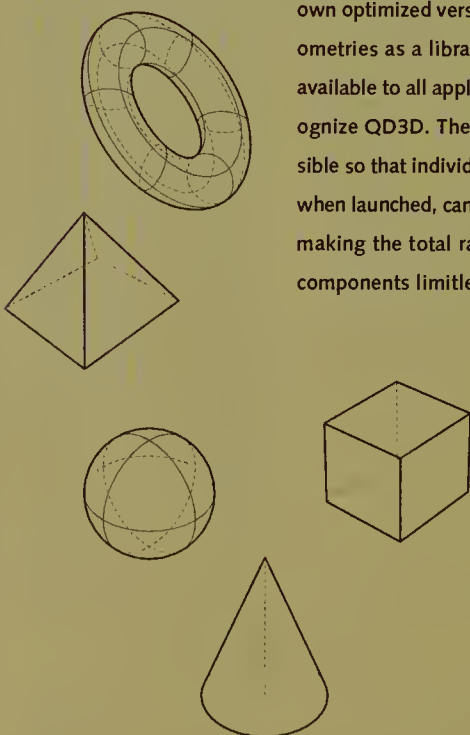
QuickDraw 3D provides standard controls for object manipulation, and a few minutes with a program that uses these controls are all it takes to appreciate Apple's interface-design

Three-dimensional computer graphics have always lacked the consistency and system support of their close cousins, 2-D graphics, which have the benefit of a cross-application clipboard, consistent text editing, and standard formats (PostScript and PICT). Apple took a close look at what's involved in creating and using 3-D images and established standard ways to increase consistency and ease of use for both the programmer and the user. These standards fall into four key areas: creating, manipulating, viewing, and file formats.

Apple's Standards Make 3-D Graphics

Creating: The Building Blocks of 3-D

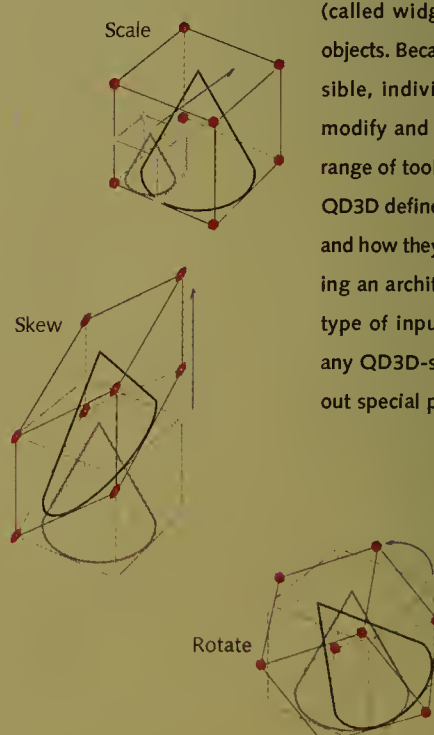
All 3-D images are made up of models (objects). These objects—spheres, cubes, cylinders, and more-complex shapes—need a defining structure, or geometry. Geometries are the building blocks of any 3-D image. Currently, 3-D applications use proprietary definitions for their geometries.



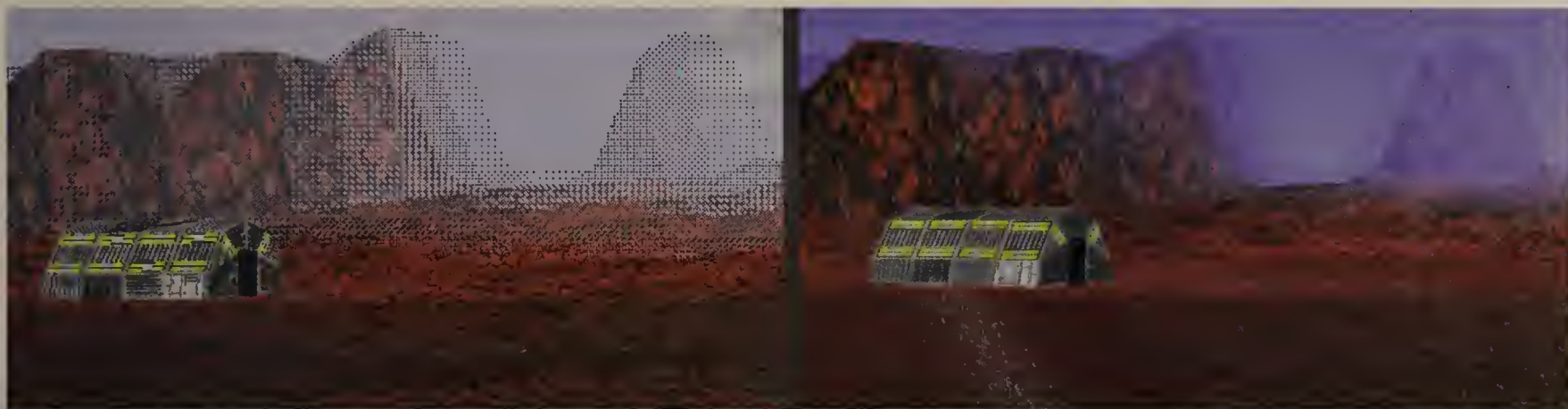
QuickDraw 3D (QD3D) provides its own optimized versions of basic geometries as a library in the system available to all applications that recognize QD3D. The library is extensible so that individual applications, when launched, can add geometries, making the total range of possible components limitless.

Manipulating: Shaping the Image

Once you've created a 3-D object, you need tools to edit the object (for scaling, skewing, reshaping, rotating, and moving). Currently, these tools vary a great deal from application to application.



QD3D provides a basic set of tools (called widgets) for manipulating objects. Because the tools are extensible, individual applications can modify and add tools, making the range of tools limitless. In addition, QD3D defines how tools are written and how they are to be used, providing an architecture that allows any type of input device to work with any QD3D-savvy application without special plug-ins.



Are You Game for QuickDraw 3D? QuickDraw 3D will lead to a new generation of games and multimedia titles that incorporate 3-D scenes and models. Reality Bytes' Havoc is the first of this new breed. Havoc takes advantage of a QuickDraw 3D-accelerator card to display more-detailed scenes and more-realistic objects. Left: Havoc without a QuickDraw 3D accelerator. Right: Havoc running with an Apple QuickDraw 3D Accelerator Card installed. Note the finer details in the ground and building, and the fog shrouding the distant mountains. As you zoom through Havoc's 3-D-accelerated world, distant objects fade into view—the effect is dramatic.

prowess (see the annotated screen shot “Exploring the QuickDraw 3D User Interface”).

Built-in 3-D Functions

Any 3-D image is built from a

set of geometric shapes—lines, triangles, polygons, cubes, and so on—called *geometries*. In the pre-QuickDraw 3D world, developers

had to write their own 3-D geometry libraries. QuickDraw 3D provides an expandable library of a dozen geometries, eliminating the need

for developers to create their own 3-D engines.

In a related vein, QuickDraw 3D provides four types of lights for illuminating a scene (again, see “Apple's Standards Make 3-D Graphics Simpler”). And thanks to QuickDraw 3D's interactive renderer, positioning lights is far easier than in most 3-D programs: as you reposition a light, you immediately see the effects.

QuickDraw 3D's built-in geometries, lights, and rendering features all have the same benefit: they eliminate the need for software developers to invent these low-level wheels, freeing them to concentrate on creating the features that differentiate their products.

At least that's the promise. The reality is that developers who are already shipping 3-D products must adapt their programs to exploit QuickDraw 3D's innovations. This process is a multistep one, and most developers have taken only the first step.

What QuickDraw 3D Delivers Now

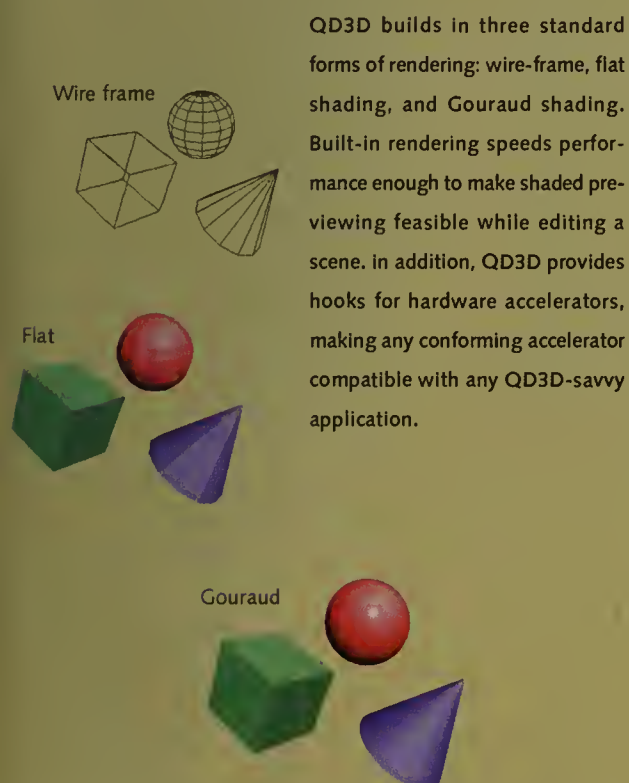
Apple has encouraged 3-D software developers to follow a multistep road map to supporting QuickDraw 3D.

3DMF Support The first and easiest phase is to add support for the 3DMF file format. This lets a program swap 3DMF models with other programs. Many major 3-D and CAD programs have already been revised to support

Simpler

Viewing: Bringing 3-D to Life

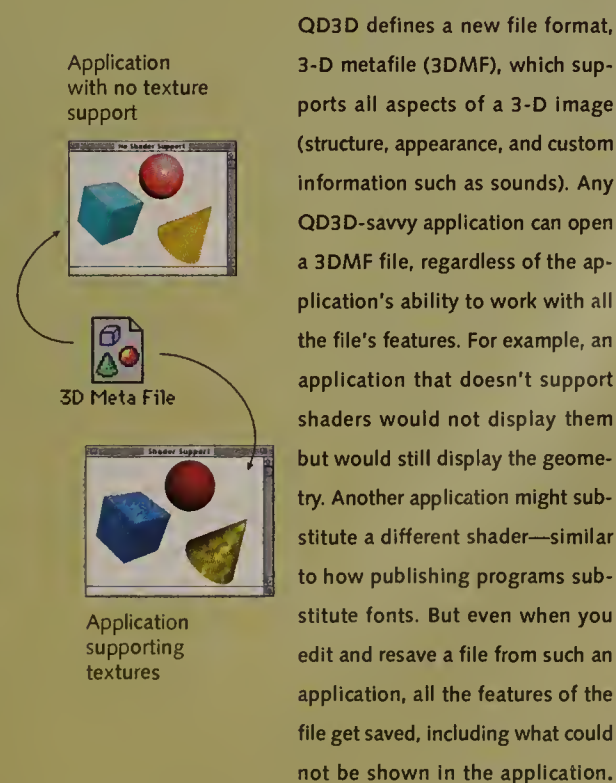
To work on an image, you must be able to view it. Current methods for displaying images vary greatly among 3-D applications. Wire-frame views are useful because of their quick display performance, even when a shaded view would be better.



QD3D builds in three standard forms of rendering: wire-frame, flat shading, and Gouraud shading. Built-in rendering speeds performance enough to make shaded previewing feasible while editing a scene. In addition, QD3D provides hooks for hardware accelerators, making any conforming accelerator compatible with any QD3D-savvy application.

File Formats: Exchanging and Saving 3-D

File formats are proprietary in many programs. Since cross-application formats support only limited amounts of image information, sharing images across applications is difficult if not impossible.



3DMF. Macromedia Director 5.0 supports it, too, making it possible for multimedia developers to add 3-D models to their titles. (QuickDraw 3D's cross-platform personality is an important advantage here: it lets title developers use one type of 3-D model

on both Macintosh and Windows platforms—just as they can use QuickTime movies on both.)

The quality of 3DMF support varies, however. For example, Strata StudioPro Blitz 1.75+ creates 3DMF files that are more complex than

they need be—what could be described as one vertex, for example, gets described as three vertices and a matrix. This makes Strata's 3DMF files larger (a 429K 3DMF file ballooned to 1.2MB in one of my tests) and slower to work with. What's more, Stu-

dioPro Blitz doesn't support NURBS (nonuniform rational B-splines, a method of representing complex, curved objects), complicating accurate file exchange with programs that do.

This example illustrates that file-exchange woes can

QuickDraw 3D Accelerators: Not So Quick on the Draw

Displaying 3-D scenes is hard work for a general-purpose processor like the PowerPC, and it helps to have a specialist chip in. Not surprisingly, several companies have designed chips that are tuned for the calculations required by 3-D software. And several hardware developers are now or will soon be shipping QuickDraw 3D accelerator cards that use these 3-D chips.

QuickDraw 3D is designed to automatically support 3-D-accelerator hardware. Adding a QuickDraw 3D accelerator provides three key benefits.

- First, there's faster overall performance: models rotate and resize faster, animations are smoother—the third dimension just feels more responsive.

- Second, an accelerator lets QuickDraw 3D provide transparency—this makes it possible to render objects such as bubbles and glasses, and in games it enables effects such as fog, smoke, and explosions. Apple chose not to support software-only transparency in QuickDraw 3D, citing the slow performance that would result.

- Finally, a 3-D accelerator lets games and multimedia titles use higher-quality, more-realistic images: superior lighting effects, antialiased (smoothed) shape edges, and higher-resolution texture mapping. This is beautifully illustrated in the first QuickDraw 3D-savvy game, Reality Bytes' (617/621-2500, <http://www.realbytes.com>; \$39) Havoc (see the screen shot "Are You Game for QuickDraw 3D?").

Havoc takes advantage of a QuickDraw 3D layer called Rave. Short for Rendering Acceleration Virtual Engine, Rave lets game developers access QuickDraw 3D hardware accelerators while retaining their existing 3-D engines. The latter is important because 3-D game engines are finely tuned for a particular game's relatively limited requirements, and thus can deliver faster performance than a general-purpose engine such as QuickDraw 3D's.

The First Cards Macworld Lab tested the first PCI-based QuickDraw 3D accelerators: Yarc Systems' Screamer (805/499-9444, <http://www.yarc.com>; \$995), Apple's QuickDraw 3D Accelerator Card (408/996-1010, <http://www.info.apple.com>; \$400), and the Matrox's MGA Millennium (514/685-2630, <http://www.matrox.com>; \$649).

Yarc's Screamer made us do just that—its performance was poor and it crashed frequently. The Screamer uses a 3Dlabs Glint 300SX processor, which does not

accelerate texture mapping. In fact, in our texture-mapping test, a Power Mac 8500 was slower with the card than without it. Although some units are still available, Yarc has withdrawn this card from the market, and is developing a new card based on the Glint 500TX processor.

Apple's QuickDraw 3D Accelerator Card delivered much better performance. Apple designed its own accelerator chip for its card, which also supports multiprocessing—install two cards,

gains of 10 to 20 percent, but it introduced some rendering artifacts and does not support texture mapping. It's hard to recommend it as a QuickDraw 3D accelerator.

The Next Generation The 3-D-accelerator picture will get brighter. Not only is Yarc working on a new card, but other companies are preparing cards of their own.

ATI Technologies (905/882-2600, <http://www.atitech.com>) will announce a family of 3-D-accelerated PCI video cards this summer. The cards will be designed and priced for the game and multimedia consumer markets and will use ATI's 3D Rage, a custom chip that supports not only QuickDraw 3D and Microsoft's Direct3D, but also full-screen MPEG video playback. 3D Rage supports texture mapping, antialiasing, alpha channels, and special transparency effects. ATI also plans to sell 3D Rage chips to other board manufacturers.



While QuickDraw 3D accelerators as a class leave much to be desired, Apple's inexpensive card is a good choice.

and they work together to boost performance even more. Another plus: if you have multiple monitors, the card accelerates 3-D for all of them.

The Matrox MGA Millennium card—a video-display acceleration card that also accelerates 3-D—provided performance

Diamond Multimedia (408/325-7000, <http://www.diamondmm.com>) is developing a card that should be appealing for gamers. The as-yet-unnamed accelerator will work with a Mac's existing video circuitry. It's slated to ship this fall at a price "well under

plague 3DMF just as easily as they do Encapsulated PostScript. We can only hope that, over time, developers will get better at writing 3DMF files that swap smoothly.

Interactive Rendering

The second phase of QuickDraw 3D support involves

interactive rendering. Supporting the interactive renderer not only lets a program provide fast 3-D rendering, but also automatically lets the program take advantage of any QuickDraw 3D accelerator cards that you have.

A developer can add sup-

port for interactive rendering without having to rewrite its application program's internal 3-D engine or adopt the QuickDraw 3D geometries. Several programs currently support interactive rendering: Specular's Infini-D 3.1 (413/253-3199, [http://www.specular](http://www.specular.com)

.com; \$899), Strata StudioPro Blitz 1.75+ (801/628-5218, <http://www.strata3d.com>; \$1495), and Microspot's 3-D World (408/253-2000, <http://microspot.inter.net/microspot/>; \$139). Many developers plan to support it in future versions of their wares.

\$200," according to Diamond.

Newer Technologies' (316/685-4904, <http://www.newertech.com>) RenderPix family of high-end cards will use 3Dlabs' chips in a variety of configurations. Cards containing one or two Glint 300SX or 500TX chips will be offered; the TX is a newer chip that provides accelerated texture mapping. Scheduled to be available by the time you read this, the cards will also support daughtercards that provide up to 6MB of additional video memory. The cards are unique in that, when fully stocked with RAM, they support 24-bit color on monitor resolutions as high as 1600 by 1200 pixels.

Newer plans to ship PCI cards as well as Processor Direct Slot (PDS) cards for the first-generation Power Macs, the Power Computing Power 100 and 120, and the Radius clones. Engineers at Newer say the PCI versions will provide better performance; the Glint chips are optimized for the PCI bus, and the PCI-to-PDS logic translations slow things down slightly.

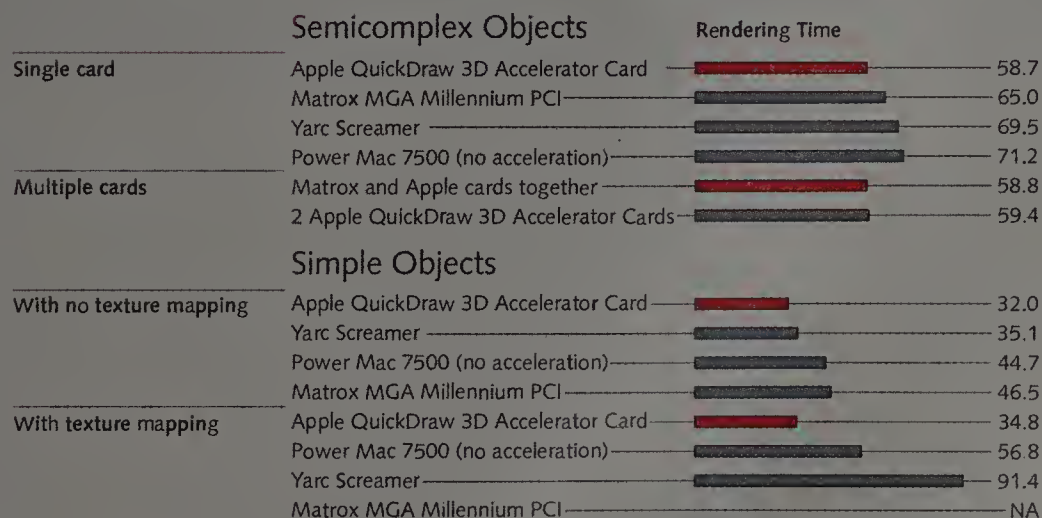
By this fall, then, expect to see QuickDraw 3D accelerators aimed at everyone from gamers to multimedia developers. If software developers deliver, there will be good reasons to buy these cards. And this will lead to the next step: building 3-D acceleration directly into the computer. Look for this to happen, experts say, within two years.



First QuickDraw 3D Cards Disappoint

Surprisingly, the first generation of QuickDraw 3D accelerator cards doesn't do all that much to accelerate QuickDraw 3D rendering for shading and texture mapping. The fastest card is the cheapest: Apple's \$400 QuickDraw 3D Accelerator Card was about 18 percent faster for semicomplex objects and 28 to 39 percent faster for simple objects, compared with an unaccelerated Mac. Other results were downright discouraging: the \$995 Yarc Screamer (which has now been discontinued) barely edged out having no card at all for the semicomplex objects, was a respectable 21 percent faster for simple objects, but was far slower than no card when texture mapping was added. The \$649 Matrox Millennium PCI was similarly mixed in its performance.

Best result in test. Products are listed from fastest to slowest. Times are in seconds. Shorter bars are better.



NA = Does not support textures; card is designed for use with 3-D modelers and Web publishing, not for games or animation.

Behind Our Tests

To test 3-D acceleration of QuickDraw 3D cards, we used Microspot's 3D World 1.0 to create a series of 3-D images that we then rendered using a Power Mac 7500/100 with a 17-inch monitor running at 832-by-624-pixel resolution and 16-bit color depth. The five semicomplex objects, including jet planes and a teapot, had 5740 faces, while the five simple objects, including cones and a sphere, had 3393 faces. We tested real-time Gouraud-shading performance on all the objects, and we also tested texture-mapping performance on the simple objects.—Macworld Lab testing supervised by Danny Lee

Full Adoption The most thorough QuickDraw 3D support involves not only adopting 3DMF support and the QuickDraw 3D geometries, but actually writing the entire program around QuickDraw 3D—technically, adopting the QuickDraw 3D application programming interface (API). This degree of QuickDraw 3D support applies primarily to 3-D modeling and CAD programs; game developers are most interested in using QuickDraw 3D for hardware acceleration.

Among currently shipping 3-D modeling programs, Microspot's 3-D World is the only completely QuickDraw 3D-savvy program. As a 3-D modeler, it's a lightweight, lacking animation features and advanced modeling tools. But it's a powerful argument for building a program around QuickDraw 3D: 3-D World is fast, clean, straightforward,

and fun to use. And with a street price of under \$100—about a fifth of what a heavy-weight 3-D package costs—it's a terrific way to experiment with 3-D. (You can download a trial version from <ftp://microspot.inter.net/pub/microspot/3Dwdemo.hqx>.)

A program must be written from the ground up to support the QuickDraw 3D API. As a result, this degree of support from existing 3-D modeling programs will be slow in coming—the established players in Mac 3-D have too significant an investment in their legacy code to recast their programs entirely around QuickDraw 3D.

Because of this, I predict that the QuickDraw 3D “killer app”—the program that puts QuickDraw 3D in every 3-D illustrator's toolbox—will come from a newcomer to the Mac 3-D software market.

Future Dimensions

By the time you read this, Apple will have shipped QuickDraw 3D 1.1. This version will also be the first to support plug-in renderers. United Kingdom-based LightWork Design (44-114-288-8404, <http://www.lightwork.com>) is developing a photo-realistic renderer, tentatively named LightWorks Advanced Photorealistic Renderer.

This product will be a significant development, since QuickDraw 3D's interactive renderer doesn't provide the fine image quality required for professional 3-D illustration.

Apple says that QuickDraw 3D 1.1 will also require less memory and manage memory more efficiently. It had better—I frequently encountered low-memory errors and even crashes when using Microspot's 3-D World on a Power Mac with 24MB of RAM. Apple is going to have

a hard time selling QuickDraw 3D as a foundation for games and entertainment titles if users are going to need 24MB of memory for good performance.

QuickDraw 3D 1.1 will include a new geometry type—the trimesh, which is intended to provide better performance with application programs that are using QuickDraw 3D's immediate mode. (Most current 3-D programs use this mode.) Programs will have to be adapted to take advantage of the trimesh.

By this summer, Apple plans to release another version of QuickDraw 3D that will deliver full extensibility. This version (Apple hasn't determined its number yet) will add support for plug-in shaders, geometry types, and even file formats.

And then there's the Internet. QuickDraw 3D models

QuickDraw 3D Does Windows

Microsoft, move over. QuickDraw 3D 1.1 will be the first cross-platform version of QuickDraw 3D—Apple will have versions for Windows 95 and Windows NT, competing with Microsoft on its own turf.

Microsoft has its own 3-D efforts. And I mean *efforts*—Microsoft has two distinct 3-D irons in the fire. First, there's Direct3D, a low-level API designed to enable hardware accelerators. Direct3D is built around Reality Lab, a consumer-level 3-D technology

aimed at applications such as games and multimedia titles; Microsoft acquired Reality Lab last year when it bought its developer, RenderMorphics.

Microsoft's second 3-D initiative involves support for Silicon Graphics' OpenGL, a 3-D API designed for high-end tasks such as modeling and computer-aided design. Support for OpenGL has been added to both Windows NT 3.5 and Windows 95.

Both technologies are impressive, but each has its own API and its own learning curve for developers—and neither provides for standard user-interface elements or cross-platform file exchange. Developers I talked to ap-

plauded Apple for creating a single technology that encompasses everything from games to high-end modeling and that includes user-interface guidelines and a file-exchange format.

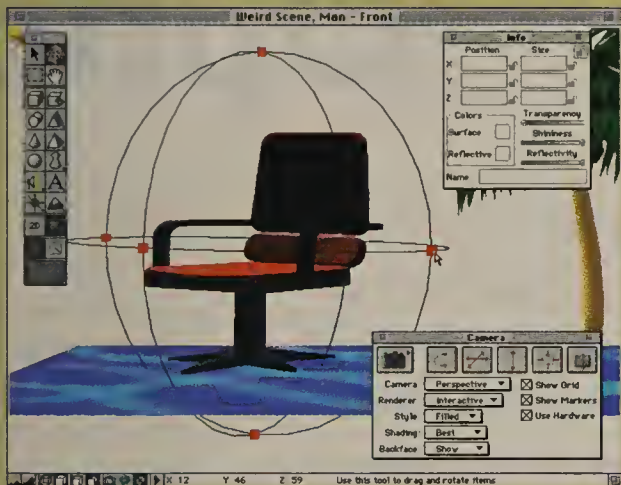
Apple also has the edge in timing: At this writing, Direct3D for Windows is in beta testing and scheduled to ship in June. Microsoft says a beta of the Mac version won't ship until late this year. The fact that QuickDraw 3D will provide game and multimedia developers with a cross-platform technology by summer is another good sign.

Of course, Windows itself has proven that a technology doesn't have to be the first or

the best to be the most successful, so it remains to be seen what QuickDraw 3D's ultimate impact on the Windows world will be.

But most developers and 3-D gurus seem optimistic about Apple's chances of establishing a cross-platform 3-D standard. QuickDraw 3D's availability on both platforms will encourage Mac and Windows developers alike to support it and the 3DMF format. History has shown that Apple's Mac OS-only technologies (QuickDraw GX, PowerTalk) have stumbled, while its cross-platform technologies (TrueType, QuickTime) have become major standards.

Exploring the QuickDraw 3D User Interface



Just as Apple has created guidelines that dictate the appearance of Open and Save dialog boxes and of the QuickTime movie controller bar, it has created user-interface guidelines for 3-D programs. Microspot's 3-D World (left) is the first—and at present, the only—program that uses the QuickDraw 3D user interface.

One key characteristic of this interface is a set of straightforward controls, called *widgets*, for resizing, rotating, and otherwise manipulating objects. Three-dimensional versions of the resizing handles that are common in drawing and publishing programs, widgets make it easy to manipulate 3-D objects and lights. When you select an object to be rotated, a rotation widget appears. You can rotate the object by dragging any of the



POP-UP MENU SWITCHES VIEWING ANGLES

MOVES THE CAMERA ANGLE

MOVES THE CAMERA (YOUR VANTAGE POINT) CLOSER TO OR FARTHER AWAY FROM THE OBJECT

MOVES THE CAMERA AROUND THE OBJECT

widget's handles. (When the mouse pointer moves over a handle, its shape changes to a hollow arrow, as shown here.)

QuickDraw 3D also provides a 3-D viewer (right) that any type of program—from word processor to Web browser to publishing program—can use to display 3DMF objects. The viewer provides a simplified set of four controls that let you view objects from different angles.

are already appearing on Web sites, but Apple has bigger things in mind. It has proposed that the 3DMF format be adopted as an extension of the Virtual Reality Modeling Language (VRML), the standard for 3-D Web sites.

Apple has joined Netscape Communications and Silicon Graphics in supporting a proposed VRML 2.0 specification called Moving Worlds. The file format for Moving Worlds will be an extension of QuickDraw 3D's 3DMF format. Although other companies, including Microsoft, are promoting their own 3-D Web agendas, the fact that Apple is in cahoots with such major players as Netscape and Silicon Graphics bodes well for 3DMF's influence on the Web.

The Last Word

Apple is also working to dovetail QuickDraw 3D with QuickTime, QuickTime VR, and QuickTime Conferencing. This conjures up intriguing possibilities: imagine working with 3-D models in a shared environment, applying QuickTime movies as texture maps, and combining 3-D models with QuickTime VR scenes.

In the meantime, Apple must work hard to establish QuickDraw 3D as the standard foundation for cross-platform 3-D. This means encouraging software developers to support more than just the 3DMF file format and helping them adapt their existing programs. The current state of QuickDraw 3D sup-

port among modeling programs isn't good enough.

Nor is the current field of QuickDraw 3D accelerator cards. Apple's card provides solid performance at a reasonable price, but a wide range of options won't appear until this summer (see the sidebar "QuickDraw 3D Accelerators: Not So Quick on the Draw").

In the end, QuickDraw 3D's greatest impact will be in the game, multimedia, and Web worlds. Those markets are far larger than the market for 3-D modeling software, and QuickDraw 3D's support of inexpensive accelerator hardware will make it possible for consumers to dramatically enhance their systems' capabilities for not much more than they'd pay for a few new

titles. For a taste of what 3-D might do for games, look at the screen shot "Are You Game for QuickDraw 3D?"

As more developers incorporate 3-D into their efforts—and especially when hardware acceleration migrates from expansion boards onto motherboards—exploring the third dimension will become as routine as playing CD-ROM video or viewing a Web graphic. QuickDraw 3D stands a good chance of being the reason why. **m**

Macworld contributing editor and Media columnist JIM HEID covers multimedia technologies and produced the interactive CD-ROM that accompanies his *Macworld New Complete Mac Handbook* (IDG Books Worldwide, 1995).



Multimedia

FROM PRESENTATIONS TO INTERACTIVE TITLES

Options

WHEN IT COMES TO MULTIMEDIA authoring software, there's good news for everyone. Thanks to the broad selection of approachable, affordable authoring programs now available, businesspeople, educators, and other mere mortals can create winning multimedia productions. These Volksprograms don't provide the development horsepower of their Cadillac cousins, but they offer easy entry into the interactive world.

At the same time, the number of authoring packages for high-end, skilled multimedia producers continues to grow, and the features they offer are increasingly sophisticated. As a result, the biggest problem facing multimedia developers these days is a matter of choice: with all the authoring packages on the market, how do you pick the one that's right for you?

For this article, I evaluated ten programs that span the spectrum from simple interactive presentation to complex multimedia development. I highlight each program's strengths and weaknesses and describe the types of projects and users for which each is best suited. For a quick comparison of their features, see the table, "The Book on Authoring Features."

Entry-Level Authoring

Who They're For Entry-level authoring packages are best

suited for creating uncomplicated, interactive business presentations and educational applications.

What They Offer These programs generally feature a simple, straightforward interface, modest system requirements, and low cost.

The Big Picture It's possible to create simple interactive programs using a presentation program such as Adobe's Persuasion or Gold Disk's Astound. I don't recommend it, though.

A better bet for basic interactive presentations is an entry-level authoring tool. Besides branching between screens and playing movies and sounds, these programs let you create sophisticated effects, such as buttons and hot spots that are highlighted when the mouse pointer is over them. Some also support hypertext, which lets you trigger an event when the user clicks on a word or phrase.

Keep in mind, though, that using an entry-level authoring program is like riding a bicycle with training wheels: you can't crash, but you can't race, either. None of the programs reviewed here let you create a stand-alone, double-clickable application file for easy distribution, and cross-

WE FIND THE RIGHT SOFTWARE FOR YOUR JOB

Multiply

platform compatibility is iffy at best. For those features, skip to the "Professional Authoring" section.

The Close-Up I tested four entry-level programs: Interactive Media's Special Delivery 2.1 (<http://www.imcinfo.com>); Roger Wagner Publishing's HyperStudio 3.1 (<http://www.hyperstudio.com>); Pierian Springs' The Digital Chisel 2.0.1c (<http://www.pierian.com>); and PowerProduction Software's Digital Box Office 1.0 (<http://www.powerproduction.com>). The first three are fine programs, each with a unique mix of strengths. Digital Box Office has promise, but too many rough edges.

Special Delivery If you're used to a linear presentation program, Special Delivery is an excellent step up. It provides such presentation-program staples as a slide-sorter window and the ability to create speaker's notes. Special Delivery can even import Persuasion and Microsoft PowerPoint files. But it also provides easy-to-use branching and interactivity features, and it's the only program in its class that supports 24-bit color.

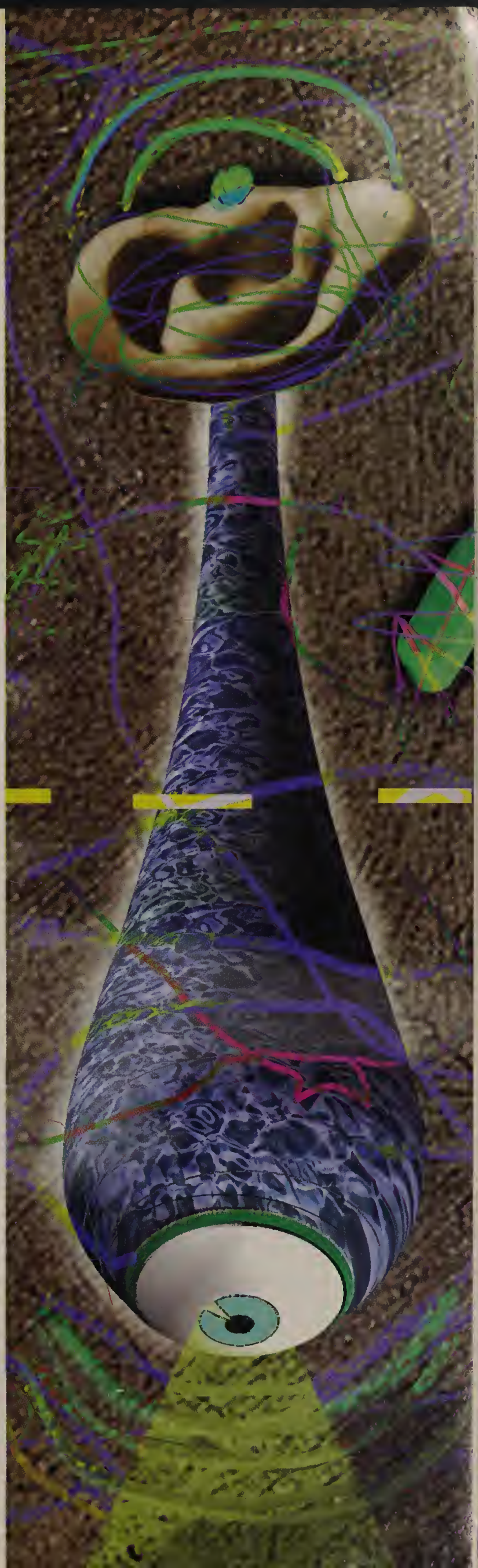
To create screens in Special Delivery, you draw placeholders, called portals, and import elements into them.

But portals aren't just frames. Switch to Special Delivery's button view, and you can draw links between portals, turning them into buttons that play movies, show or hide elements, or branch to other screens or even other programs. The scheme is easy and fast, although it can be difficult to decipher the links in a screen containing lots of interactive elements.

Special Delivery can't import text files, however; nor can you create text fields containing standard Mac scroll bars. The program lacks animation features and its interface has cosmetic rough spots, such as some poorly organized dialog boxes. Overall, though, Special Delivery is well suited to productions that require full 24-bit color support and don't involve animation or extensive text handling.

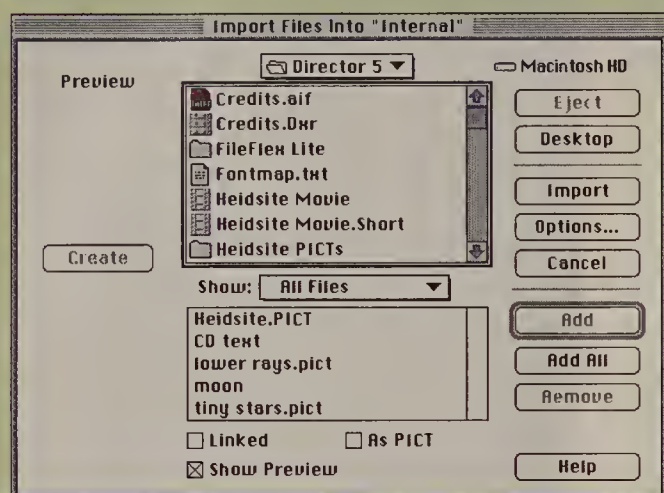
HyperStudio and The Digital Chisel These two programs are more ambitious than Special Delivery, providing a broader range of authoring features with an emphasis on education. In each application, a tool palette provides painting and button-manipulation tools (The Digital Chisel also

BY JIM HEID

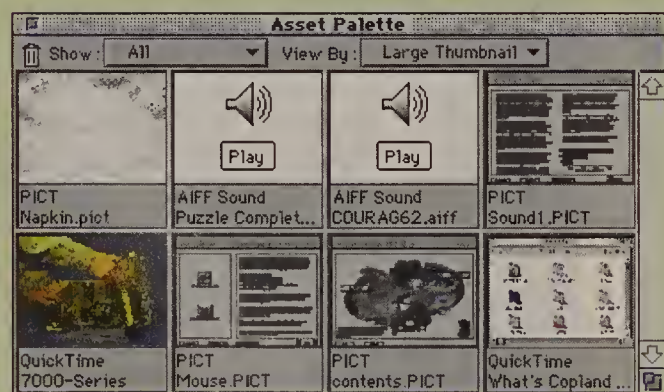
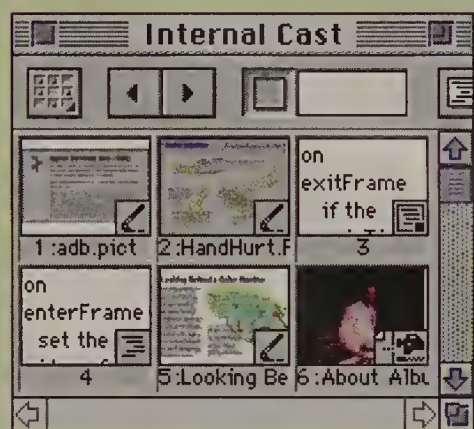


Importing and Managing Media

The first step in an authoring project—after careful planning, storyboarding, interface testing, and media production—is to import your content.



Macromedia Director 5.0, like most high-end authoring programs, lets you import multiple elements in one fell swoop.



High-end programs provide a window that shows the elements used in a project, as shown here in Director 5.0 (middle) and mTropolis (bottom). Director's Internal Cast window is far more than just an element listing—a cast can have its own scripts, and you can switch between multiple casts, a capability that allows great flexibility in structuring projects. mTropolis earns points for providing several viewing options and for enabling you to audition sounds. Apple Media Tool enables you to import items by dragging icons from the Finder to the Media window.

provides object-oriented drawing tools). File-import commands let you bring in graphics, sounds, movies, and text. To specify branching or other interactivity, you double-click on an element and then specify events in a subsequent dialog box.

Text support is excellent, as HyperStudio and The Digital Chisel offer scrolling text fields and hypertext. Both programs also provide animation features, can control an external laser-disc player, and play tracks from an audio CD.

With the programs' education-oriented features, you can easily create multiple-choice or true-false tests by designating buttons or other hot spots as correct or incorrect answers. The Digital Chisel out-educates HyperStudio—it can play sounds when students make correct or incorrect choices, calculate and display the final score when the test is complete, and display student progress in a database window. The Digital Chisel can also import 24-bit color images; HyperStudio is limited to 8-bit color. And The Digital Chisel comes with an unbeatable educational site license (\$895), which permits every staff member *and student* to copy the program.

But HyperStudio is no high school dropout. It's more reliable than The Digital Chisel—the latter's Undo command, for instance, often undoes the wrong action. HyperStudio is also the only program in this class that provides a full scripting language, a capable variant of the Logo language popular in education settings. HyperStudio's QuickTime support is excellent—used with a Mac containing video-digitizing hardware, it can display live video and capture single frames; The Digital Chisel can't do either. And HyperStudio is the only program in this group that en-

ables you to show the QuickTime navigation scroll bar.

HyperStudio is also extensible: programmers can write modules that add features to the application. HyperStudio ships with numerous first-rate modules, including one that provides text-to-speech translation and two that let you link elements in a presentation to specific Web sites. Overall, The Digital Chisel and HyperStudio are both excellent applications, though HyperStudio is the more powerful of the two.

Digital Box Office This relative newcomer brings some good ideas to the entry-level authoring market. A timeline window makes it easy to create transitions between screens, as well as special audio effects such as background music that plays across multiple screens. You create interactivity by selecting objects, then choosing options from a tool palette. As you do, lists of events and actions appear—no scripting necessary.

But these good ideas are overshadowed by an awkward interface and some bugs. The tool palette has a confusing array of 11 icons—it looks like a wall of hieroglyphics. The program's Undo command doesn't always work. Attempting to import an audio-only QuickTime movie earns you the opaque error message "101:-108." All in all, Digital Box Office needs work.

Professional Authoring

Who They're For Professional authoring packages are best suited for skilled, trained multimedia developers who need to create interactive CD-ROMs or kiosks that deliver rich multimedia experiences.

What They Offer These packages provide precise control over a variety of media elements; cross-platform compatibility; broad file-format support; custom menus and

dialog boxes; and animation controls.

The Big Picture If you want to create finely tuned, fully featured productions, you need a high-end authoring program. Scripting languages and support for custom code give you full control

over media, memory, disk files, and more. Resource-management features let you use memory efficiently and squeeze every bit of performance out of a CD-ROM drive. Support for custom pull-down menus enables a navigation scheme every Mac

and Windows user can follow.

It takes time to master the advanced features in a professional authoring program, however. In most cases, prepare to spend some real money, too.

The Close-Up Given the Mac's popularity among mul-

timedia developers, it isn't surprising that the largest selection of programs is in the high-end group. I tested six: Apple's Apple Media Tool 2.0 (<http://www.apple.com>); mFactory's mTropolis 1.0 (<http://www.mfactory.com/>); Macro-media's Authorware 3.5 ([## Stocking the Media Toolbox](http://</p></div><div data-bbox=)

As robust as most authoring programs can

be, you'll still need other applications to

create a rich multimedia presentation.

Here's a guide to the best media-produc-

tion programs and utilities available.

Video Editing and Effects

Adobe After Effects (\$1995; 415/961-4400, <http://www.adobe.com>), the industry-standard motion-effects package, lets you layer text, images, and video for stunning special effects (see *Reviews*, March 1996).

Adobe Premiere (\$795; 415/961-4400, <http://www.adobe.com>), the Mac's top video-editing program, doesn't handle long-form projects with great efficiency. But it's well suited to creating the kinds of movies typically used on CD-ROMs (see *Reviews*, March 1996).

MetaTools Final Effects 3.0 (\$695; 805/566-6200, <http://www.hsc.com>), a set of plug-ins for After Effects, adds dozens of special effects, from 3-D transitions to explosions (see *Reviews*, April 1996). (Final Effects AP, a set of plug-ins for Premiere, is now available, too; see *Reviews*, elsewhere in this issue.)

Terran Interactive Movie Cleaner Pro (\$695; 408/353-8859, <http://www.terran-int.com>), an essential part of digital-video production, compresses movies so that they play smoothly from a CD-ROM. No compression utility is easier to use or provides better results than Movie Cleaner Pro (see *Reviews*, April 1996).

Audio Editing and Processing

Waves L1 Ultramaximizer (\$600 to \$850; 423/588-9307, <http://www.waves.com>) optimizes low-bandwidth audio to sound its best although CD-ROMs and the Web don't allow for CD-quality audio (see "The Mac Recording Studio," December 1995, and *Media*, April 1996).

4400, <http://www.adobe.com>), a timesaving Adobe utility, lets you use a page-layout program to create screens (see *Reviews*, December 1995; and *Media*, June 1996).

Equilibrium DeBabelizer ToolBox (\$399; 415/332-4343, <http://www.equilibrium.com>), a graphics workhorse, can convert file formats, optimize graphics for 256-color displays, and more. It's an essential tool for taming the myriad graphics behind a large project.

Clip Media

Jawai Interactive's Screen Caffeine Pro (\$149; 512/469-0502, <http://www.jawai.com>), a CD-ROM with more than 600 graphics, offers screen backgrounds, buttons, controls, dials, and more. A slick viewer lets you browse the collection, apply variations, and develop an original user-interface design.

Network Music's Presentation Audio (619/451-6400), a library of original music, is available on five CD-ROMs

(\$49.95 each). The library has been used by smart broadcasters since 1979. The CDs are currently available in Windows format only, but Macintosh users can access the WAV files on the CDs via Apple's PC Exchange software. It's worth the trouble: this is the best stock music available.



Give Your Screens a Lift Jawai Interactive's Screen Caffeine Pro is a CD-ROM-based collection of screen backgrounds, textures, and buttons that you can use in your productions.

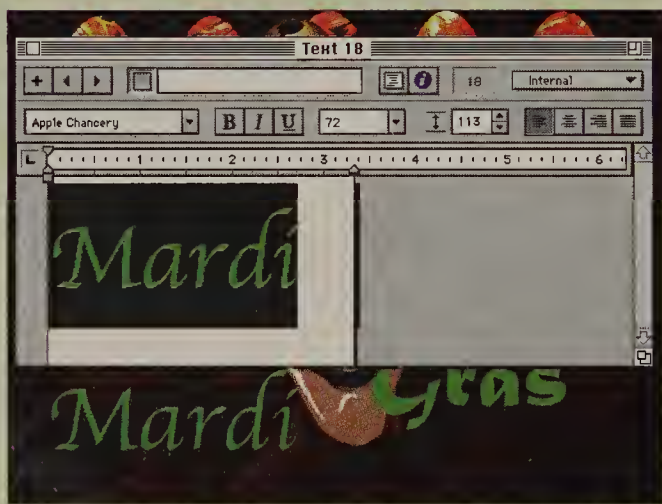
Image Editing and Screen Design

Adobe Photoshop (\$895; 415/961-4400, <http://www.adobe.com>) is the definitive image-editing program, widely used by multimedia developers to design screens (see *Reviews*, January 1995).

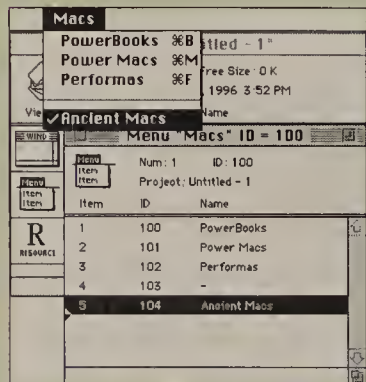
Adobe ScreenReady (\$199; 415/961-

Designing the User Interface

Many media producers use programs such as Adobe Photoshop to design screens and backgrounds, but ultimately you must rely on an authoring program's layout features to position multiple media elements and create buttons, hot spots, and other user-interface elements.



Director 5.0's built-in, 24-bit painting features (top) complement its animation features, while its text-editor window (bottom) enables you to create, format, and edit antialiased text effortlessly.



Among authoring programs, SuperCard provides the best support for standard user-interface elements. Its menu editor makes it easy to create pull-down menus complete with ⌘-key shortcuts, dividing lines, and check marks.

www.macromedia.com); Allegiant Technologies' SuperCard 2.5.2 (<http://www.allegiant.com>); Oracle's Oracle Media Objects 1.0.5.4 (<http://www.oracle.com/>), which takes first place in the Longest Version Number event; and Macromedia's Director 5.0.

Apple Media Tool, mTropolis, and Authorware enable you to create projects without writing scripts (the latter two also provide scripting features). SuperCard, Director, and Oracle Media Objects, on the other hand, rely heavily on scripting.

Apple Media Tool Apple Media Tool (AMT) 2.0 is ideal for someone wanting to graduate from an entry-level authoring package. It provides the click-and-drag simplicity of an entry-level package, but adds excellent cross-platform support and other benefits.

You won't find a single content-creation tool in AMT—no text tool for typing a headline or fixing a typo, no shape tools for drawing lines or boxes. In the world according to AMT, you create media elements in other programs and use AMT to integrate them. The process is easy, although managing links in large projects is cumbersome.

AMT 2.0 supports text much better than its predecessor did; you can, for instance, create scrolling text fields containing hypertext links. And a new cross-platform run-time player makes it a relatively painless process to create Mac and Windows versions of a title that share a single set of media elements.

AMT 2.0 also offers superb support for QuickTime VR—you can include both object and panoramic movies in a production with absolutely no scripting. Only AMT and mFactory's forthcoming mTropolis 1.1 can make this claim.

AMT 2.0 lacks a scripting

language, but Apple sells a companion product, the \$995 Apple Media Tool Programming Environment, that enables you to add custom code for implementing dialog boxes, disk input/output, and custom menu bars. Alas, the Apple Media Language, as it's called, is oriented toward programmers and is more difficult to learn than the scripting languages used by other programs.

But this drawback is consistent with AMT's design philosophy as a program that integrates the efforts of a team. In AMT's world, a programmer is available to implement anything more complex than branching between screens or displaying, hiding, and playing media. That isn't always the case in the real world, of course. If you aren't a programmer and can't hire one, but need things such as dialog boxes, multiple windows, math calculations, disk access, and custom menus, look for a different authoring program.

mTropolis Any program that costs \$4995 had better be good. mTropolis is good. In some areas, in fact, it's awesome, combining the performance and power of Macromedia Director with an unthreatening interface and a groundbreaking approach to object interaction.

To sum up, mTropolis is a superb choice for dynamic interactive games and animation-oriented titles. However, for titles requiring custom menu bars and dialog boxes or database features, consider SuperCard, Oracle Media Objects, or Director instead—C programming is required to add these features to an mTropolis title.

Authorware Originally designed to enable educators to create interactive, educational courseware, Macromedia's Authorware combines the industrial-strength features

Authoring Meets the Web

As the red-hot World Wide Web evolves

from a frontier into a mainstream commu-

nications medium, Web developers are

increasingly eager to offer more than text,

graphics, and hyperlinks on their sites. Here

are three ways in which authoring pro-

grams and the Internet can work together.

Browser Plug-Ins Using plug-ins—software add-ons that work within a Web browser such as Netscape Navigator 2.0—Web content developers can endow their sites with animation, sound, and sophisticated user interfaces.

The most popular browser plug-in for multimedia is Macromedia's free Shockwave for Director (415/252-2000, <http://www.macromedia.com>), which lets you embed specially adapted Director projects in HTML documents. When users have the Shockwave for Director plug-in installed, they can view multimedia content—a spinning globe with a jet-sound effect on an airline's home page, for instance—that users without the plug-in don't see. The newly released Shockwave for Authorware lets users view Authorware projects on the Web.

Pierian Springs' \$159 Digital Chisel://HTML is a special version of The Digital Chisel that can convert projects into static HTML screens. This plug-in turns The Digital Chisel into a basic Web authoring tool, but doesn't enable the direct playback of The Digital Chisel productions over the Web. On the other hand, Interactive Media offers the free Special Delivery Internet Helper Application, which enables Web surfers to download and automatically launch Special Delivery projects. While the helper application allows Special Delivery developers to distribute projects over the Web, it doesn't permit projects to play within Web pages.

CD-ROMs with Internet Access With the right software, developers can create interactive multimedia titles that offer consumers the speed and storage capacity of a CD, along with the up-to-the-minute timeliness possible with the Web. A CD-ROM on sports, for example, could link to a Web site that displays current statistics.

One crude way to accomplish this is with a few lines of AppleScript code that launch a Web browser and go to a specific URL (Uniform Resource Locator). This works in any AppleScript-savvy authoring

stored on a CD-ROM or hard drive—no separate Web browser is required.

Allegiant's Marionet (\$219) addresses this need nicely, supporting several Internet access protocols, including HTTP and FTP. An external command (XCMD), Marionet works with SuperCard, Apple's HyperCard, Macromedia Director, and programs that support the AppleScript or UserLand Frontier scripting languages.

The forthcoming ClickWorks authoring program, from Scitex (617/275-5150, <http://www.scitex.com/pitango>), makes it

exceptionally easy to include information from Web sites directly in a CD. Macromedia says it plans to add direct Web access from CDs to Shockwave for Director sometime this year. And HyperStudio includes a simple program that enables you to access information stored on FTP sites from within HyperStudio projects.

Web Sites with CD-ROM Access The twist here is that a Web site is the primary medium for your content, but the site is linked to a CD-ROM containing high-bandwidth data such as digital video or high-resolution graphics. Imagine a comic-book collector's site that uses the Web for navigation and current pricing information, but uses the CD-ROM to display high-res, full-color samples quickly.

Macromedia's Shockwave for Director 5 has some rudimentary features that enable Shockwave movies to access a local CD-ROM, and Macromedia plans more enhancements for future Shockwave versions.



Director Courts the Web Macromedia's Shockwave for Director technology allows users to create productions in Director, embed them in Web sites, and view them using the Netscape Navigator browser and Shockwave for Director plug-in. This example, from the Coach's Edge site (<http://www.coachesedge.com>), uses Director animations to illustrate the basketball's moving from player to player, the players' jockeying for position on the court, and the ball's entering the basket.

program, including SuperCard, HyperCard, and Oracle Media Objects.

A better technique, however, is to integrate Web data so that media retrieved from the Web can appear alongside media

The Book on Authoring Features

ENTRY LEVEL

HIGH END

	Digital Box Office 1.0	The Digital Chisel 2.0.1c	Editors' Choice HyperStudio 3.1	Editors' Choice Special Delivery 2.1	Apple Media Tool 2.0
Company	PowerProduction Software	Pierian Springs Software	Roger Wagner Publishing	Interactive Media	Apple Computer
Star rating*	★★/3.9	★★★/6.8	★★★★/7.0	★★★★/7.0	★★★★/7.1
List price	\$599	\$99	\$199.95	\$259	\$495
Phone	310/937-4411	503/222-2044	619/442-0522	415/948-0745	408/996-1010
Screen-Layout Features					
Built-in painting/drawing	○/●	●/●	●/●	○/●	○/○
Alignment/grouping	●/●	●/●	○/○	●/○	●/○
Maximum colors: objects/images	256/millions	256/millions	256/256	millions/millions	NA/millions
Animation Features					
Path-based/in-betweening	●/basic	●/basic	●/basic	○/○	○/○
Interactivity and Interface					
Requires scripting for basic interactivity	○	○	○	○	○
Scrolling text fields/hypertext	○/○	●/●	●/●	●/○	●/●
Run-Time Features					
Performance tuning/Windows support	basic/●	○/○	○/●	○/○	○/●
Comments	Combines object- and timeline- oriented authoring, but has a buggy, awkward interface.	Strong student-tracking and interface, and inexpensive educational site license, but poor Undo command.	Easy to use and very powerful, but relatively few student-tracking options.	Easy to use and offers full 24-bit color support, but lacks hypertext and standard text scrolling.	Easy for basic interactivity and excellent cross- platform support, but advanced features require extra-cost program- ming environment.

○ = yes, ● = no; NA = not applicable. * Based on features, implementation, innovation, performance, reliability, ease of use, and value. (See Star Ratings section for explanation.) **SuperCard can

developers need with much richer courseware features than HyperStudio and The Digital Chisel provide.

In Authorware, you draw iconic flow-lines that depict the flow of the project and the relationships between its elements. In the program's arsenal of icons, some handle branching while others display QuickTime movies, play sounds, perform calculations, and move objects on screen. Authorware also provides scripting for more demanding tasks, such as performing calculations, responding to dialog-box choices, and accessing disk files.

Authorware has several production-streamlining features. A framework icon specifies that certain elements, such as background graphics and navigation buttons, repeat on each screen—a feature much like a publishing program's master page. Combine this with Authorware's RTF text-file import, which automatically creates a new screen

each time it encounters a page-break code, and you have a mean screen-making machine.

Authorware 3.5, which began shipping at press time, can produce native Power Mac and Windows 95 applications and provides excellent Internet support. The program's only real weaknesses: no support for antialiased text, and a fairly steep learning curve. Oh, and the price—like mTropolis, it costs \$4995, although Authorware also includes Macromedia Director, xRes, Extreme 3D, SoundEdit 16, and Deck II. (Educational institutions can buy Authorware itself for \$995.)

SuperCard This product has been around for ages, and is now better than ever. SuperCard's SuperEdit program is where you do most of your authoring. SuperEdit lets you create windows, import graphics, create custom menus, and import and manage resources such as external commands (XCMDs) and sound re-

sources (SNDs). SuperEdit can't import text files, although you can paste styled text (a standard Clipboard format supported by many word processors) into text fields.

SuperCard provides a full array of object-oriented drawing tools, as well as 8-bit painting features. For interactivity, you need to speak SuperTalk, SuperCard's scripting language. You can't create a branching button, play a sound or movie, or show and hide graphics without writing a script. SuperCard includes several utilities that create common script types for you, but in general you have to type a lot to implement things that involve a few mouse-clicks in Apple Media Tool, mTropolis, and Macromedia Authorware.

One of SuperCard's strengths is the ease with which it lets you create user-interface elements. Creating menus, dialog boxes, pop-up menus, custom icons, windows, and floating palettes is

easier in SuperCard than in any of the other programs reviewed here. Allegiant's Marionet extension, which is included, adds excellent Internet support. For creating dynamic, animation-oriented games, mTropolis and Director are better tools. But SuperCard excels at all other tasks, particularly ones that make extensive use of application-style user-interface elements.

Note that of the six high-end programs reviewed here, SuperCard is the only one that doesn't support Windows; a Windows player and run-time editor should be shipping later this year (the run-time version will retail for \$495, or \$199 for registered SuperCard users).

Oracle Media Objects Like SuperCard, Oracle Media Objects (OMO) borrows heavily from the HyperCard lexicon. Screens are *cards*, a collection of them is a *stack*, and scripts handle every aspect of interactivity. But OMO lacks the excellent project-

**SAVE
60%**
*off the
cover
price*

12 Issues for \$24!

☐ Send me 1 year/12 monthly issues of Macworld for \$24 plus 2 FREE Pogue Premium Utilities Disks. Save 20% off the basic subscription rate. Please bill me.

☐ SAVE EVEN MORE! 2 years/24 monthly issues for \$39.97 plus 2 FREE Pogue Premium Utilities Disks. Please bill me.

Name _____

Company _____

Address _____

City/State/Zip _____

E-Mail _____

Macworld

Check us out at <http://www.macworld.com>

**FREE
GIFT!**



Macworld editor David Pogue personally assembled some of the most practical, innovative, fun-to-use utilities ever authored. You'll find 14 complete power utilities in this great collection. The 2 disks are both yours—FREE!

Basic subscription price is \$30 for 12 issues. The annual cover price is \$4.95 per issue. For Mexican and Canadian subscriptions, please add \$18 per year for shipping; \$70 for all other foreign countries.

4EKH6

**SAVE
60%**

*off the
cover
price*



NO POSTAGE
NECESSARY
IF MAILED IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 1167 BOULDER, CO

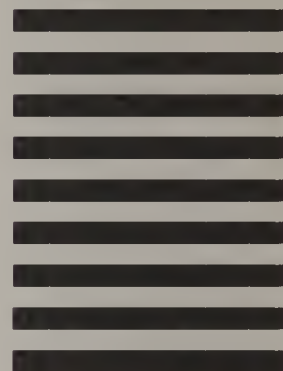
POSTAGE WILL BE PAID BY ADDRESSEE

Macworld

SUBSCRIPTION DEPARTMENT

P.O. BOX 51666

BOULDER, CO 80323-1666



Authorware 3.5	Editors' Choice Director 5.0	mTropolis 1.0	Oracle Media Objects 1.0.5.4	Editors' Choice SuperCard 2.5.2
Macromedia	Macromedia	mFactory	Oracle	Allegiant Technologies
★★★★/7.1	★★★★/7.2	★★★★/7.0	★★★/6.8	★★★★/7.1
\$4995	\$850	\$4995	\$495	\$595
415/252-2000	415/252-2000	415/548-0600	415/506-7000	619/587-0500
●/●	●/●	○/○	●/●	●/●
●/●	●/○	●/○	○/○	●/●
256/millions	256/millions	NA/millions	256/millions	256**/millions
●/basic	●/advanced	●/advanced	●/advanced	●/basic
●	●	○	●	●
●/●	●/○	○/○	●/●	●/●
basic/●	advanced/●	advanced/●	○/●	basic/○
Iconic operating style; excellent courseware features and cross-platform and Internet support; expensive.	Fast, with excellent cross-platform and Internet support, and superb animation and text support, but has a steep learning curve, and scripting is required for most interactivity.	Fast; superb game-development environment; easy to implement most interactivity; excellent cross-platform support; limited text support; expensive.	Straightforward interface and multi-platform support, with tight links to Oracle databases, but scripting required for most interactivity, and limited text support.	Superb resource-management features and support for standard user-interface elements, plus native database features, but projects can be sluggish.

import 24-bit object-oriented drawings, but objects drawn within the program are limited to 256 colors.

management features of SuperCard's SuperEdit program, and in general it's not as mature an authoring tool. You can't, for example, create a stand-alone application—you must distribute a run-time player with your project. On the plus side, OMO includes run-time players for both Mac and Windows. Run-time support is also available for a variety of interactive TV set-top boxes, as well as the World Wide Web.

OMO has other strengths, including path-based animation and a logically designed interface that I found easier to learn than SuperCard's. And unlike SuperCard, OMO can import text files, albeit sans formatting.

OMO also has a unique datasheet that presents information in a spreadsheetlike row-and-column format. Datasheets can even have resizable rows and columns. OMO's Media Talk scripting language includes commands for sorting datasheets and

importing tab-delimited text files. These features make OMO well qualified for applications that work with spreadsheet or database information.

OMO is available in trial form from Oracle's Web site. OMO may not squash the competition, but there's a lot to like here, particularly for businesses using Oracle's database and server products.

Macromedia Director The program whose name is synonymous with authoring has just turned 5.0. In the new version, Macromedia has done a beautiful job of addressing the needs of developers who create multimedia on a daily basis. Director 5.0 streamlines numerous aspects of the production process. Unfortunately, the update retains Director's traditional approach to authoring, which makes creating basic interactivity harder than it is with other authoring tools.

In Director, you work primarily in the Score window, a timeline composed of frames

into which you place media elements. These elements are then stored in a kind of database called a cast. If you're creating a linear project that will run from start to finish—say, an animation or a self-running presentation—the Score window is fairly easy to use.

Implementing interactivity requires some fancy footwork, though—not to mention writing scripts in Director's scripting language, Lingo. To create a branching button, for instance, you assign a name to the frame where a different screen begins, then attach to the button a Lingo script that causes playback to jump to the named frame when the button is clicked. It's this approach that gives Director its reputation for being a bear to learn.

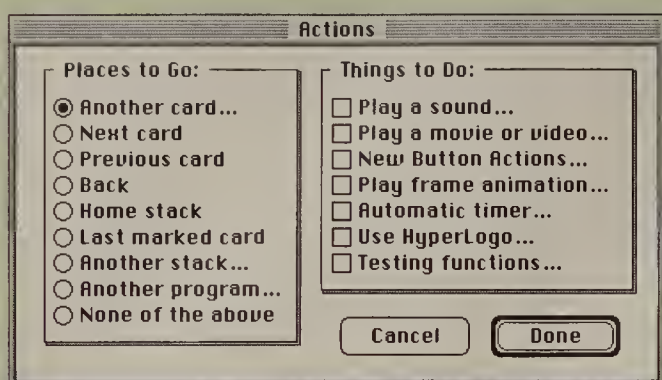
Still, thousands of developers have scaled Mount Director and discovered its treasures: unmatched control over memory and performance; powerful animation features; built-in, 24-bit paint-

ing; broad multiplatform support (you have to buy the Windows version in order to create Windows titles, however); a universe of third-party plug-ins, extensions, and canned media elements such as preprogrammed buttons; and Internet support through Macromedia's Shockwave for Director technology. Director's learning curve is steep, but the view is beautiful from the summit.

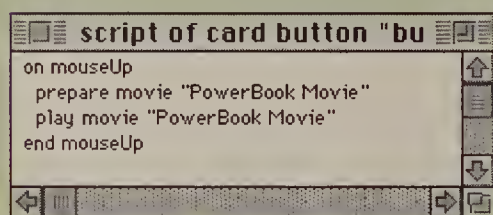
Director 5.0 takes authoring to new heights. For example, it now supports multiple casts, enabling you to create and reuse templates and adapt titles for other languages. A built-in word processor supports kerning, tabs, and other advanced formatting features. And the moment you finish editing text, Director 5.0 antialiases it—glorious. An included database manager (actually a plug-in that taps into Director 5.0's new extensible architecture) enables you to create and manipulate databases.

Implementing Interactivity

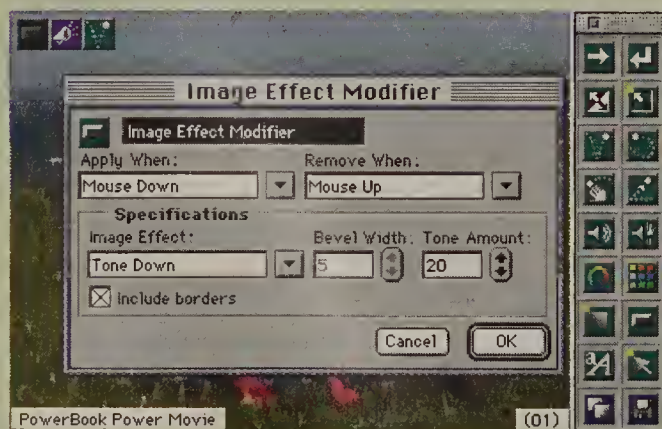
The way you implement branching and other interactivity is one of the great differentiating factors between programs.



Roger Wagner Publishing's HyperStudio holds your hand through the process. First, you select an item (in this case, a button), and then specify an action to take place when the button is clicked (on the left).



Many programs, including Director 5.0, Oracle Media Objects, and SuperCard, rely heavily on scripting languages for interactivity. This Oracle Media Objects script is attached to a button and plays a QuickTime movie when you click on the button.



Apple Media Tool and mFactory's mTropolis make many aspects of interactivity a click-and-drag proposition. In mTropolis, shown here, you drag modifier icons from a palette (at right) to the media element they modify (in this case, a QuickTime movie). A small icon representing the modifier appears in the upper left corner of the element. Double-click on the icon, and you can fine-tune the modifier's actions. This modifier tells mTropolis to dim the movie's image when a user clicks the mouse on it, in order to provide visual feedback.

In short, this powerhouse program is the best available for complex, performance-sensitive projects involving animation. (For more details on Director 5.0, see *Reviews*, July 1996.)

The Last Word

So which program should you buy? If you're a newcomer and you don't require hypertext and scrolling text fields, get Special Delivery. For educational work or text-oriented projects, both The Digital Chisel and HyperStudio are excellent. The Digital Chisel provides a more complete set of education-oriented features, but HyperStudio is the more powerful program.

At the high end, Apple Media Tool gets the prize for ease of use—there isn't an easier road to cross-platform interactivity. SuperCard is the program of choice for creating interactive titles that rely heavily on standard user-interface elements. mTropolis and Director are preferable for cross-platform development of performance-critical, animation-oriented projects such as games.

If this describes your project, should you buy Director or mTropolis? I strongly prefer mTropolis's approach to authoring, but Director's maturity, superior screen-layout tools, and broad third-party support make it the best choice for developing major-league multimedia.

Of course, creating an interactive production requires more than just an authoring program. You also need video- and audio-production software, a graphics package, and some help with screen backgrounds and music (see the sidebar "Stocking the Media Toolbox").

And don't forget to create storyboards for your ideas, and to design, test, and refine the way in which you present

them. This is the hardest part of the process, the part that doesn't have a menu command or keyboard shortcut. Things may have changed dramatically since the days when the only real authoring tools were a typewriter or a pen, but it still takes creativity and hard work to communicate ideas effectively. **m**

Macworld Media columnist and contributing editor JIM HEID produced the interactive CD-ROM that accompanies his *Macworld New Complete Mac Handbook*, fourth edition (IDG Books Worldwide, 1995).

AUTHORING PROGRAMS



No single program can meet all the needs of today's multimedia authors. Within key categories, however, several programs stand out.

Entry-Level Authoring

★★★★/7.0 **Special Delivery 2.1** This program offers a wide range of interactivity yet has modest system requirements. **Company:** Interactive Media (415/948-0745, <http://www.imcinfo.com>). List price: \$259.

Educational Authoring

★★★★/7.0 **HyperStudio 3.1** Easy to use yet powerful, HyperStudio is ideal for educational productions. **Company:** Roger Wagner Publishing (619/442-0522, <http://www.hyperstudio.com>). List price: \$199.95.

Professional Authoring

★★★★/7.1 **SuperCard 2.5.2** The program of choice for developing multimedia applications that require standard user-interface elements and database features. **Company:** Allegiant Technologies (619/587-0500, <http://allegiant.com>). List price: \$595.

★★★★/7.2 **Director 5.0** This authoring legend retains its steep learning curve but is the best choice for performance-sensitive, animation-oriented, cross-platform productions. **Company:** Macromedia (415/252-2000, <http://www.macromedia.com>). List price: \$850.

NEW
DIAMONDTRON™
CRT
DESIGN



APPLE CRISP

For Apple® users, there is an entirely new way of looking at your monitor. DIAMONDTRON™ from Mitsubishi Electronics is a complete reinvention of CRT technology. Everything you've seen before will pale in comparison to the display performance and application versatility of Mitsubishi's new family of sharper and brighter DIAMONDTRON monitors, including the Diamond Pro® 17TX (17" CRT/16.0" diagonal viewable image) and Diamond Pro 21TX (21" CRT/19.7" diagonal viewable image) models.

Whatever your Apple application, a Mitsubishi DIAMONDTRON monitor will provide superb image quality and a large viewing area. Plus, the DIAMONDTRON CRT incorporates a Digital Chassis design which results in a lighter, more compact enclosure for

easy integration into existing work spaces.

Make sure your next monitor isn't based on out-of-date technology. Ask for Mitsubishi's cutting edge DIAMONDTRON monitors. With a design this revolutionary, there will soon be followers. So, remember to specify the *original* from Mitsubishi Electronics. For more information on our complete line of color monitors, call us at **1-800-843-2515** in the U.S. and Mexico. In Canada call **1-800-387-9630**. For immediate product specifications, call Mitsubishi Qwikfax at **1-800-937-2094**. <http://www.mela-itg.com>

The Mitsubishi Desktop Product Line

Model	CRT Size	Maximum Addressable Resolution (H x V) Pixels	Auto-Scan Range	Estimated Selling Price
Performance Line				
Diamond Scan 15HX	15"/13.8" DVI*	1280 x 1024/60 Hz NI, 1024 x 768/75 Hz	H:30-64 kHz, V:50-90 Hz	\$450.00
Diamond Scan 15VX	15"/13.8" DVI*	1280 x 1024/60 Hz NI,	H:30-65 kHz, V:55-100 Hz	\$410.00
Diamond Scan 17HX	17"/15.7" DVI*	1600 x 1200/65 Hz NI	H:30-82 kHz, V:50-130 Hz	\$849.00
Diamond Scan 20H	20"/18.6" DVI*+	1600 x 1200/65 Hz NI	H:30-82 kHz, V:50-152 Hz	\$1,699.00
Diamond Scan 20M	20"/18.6" DVI*	1024 x 768 I, 800 x 600 NI	H:15-38 kHz, V:45-90 Hz	\$1,699.00
Diamond Scan 20LP	20"/18.6" DVI*	1024 x 768 I, 800 x 600 NI	H:15-38 kHz, V:45-90 Hz	\$1,745.00
Professional Line				
Diamond Pro 17TX	17"/16.0" DVI*+	1600 x 1200/66 Hz NI	H:30-86 kHz, V:50-152 Hz	\$1,059.00
Diamond Pro 21TX	21"/19.7" DVI*+	1600 x 1200/75 Hz NI	H:30-93 kHz, V:50-152 Hz	\$1,899.00

* DVI: Diagonal Viewable Image. Certain non-standard timing formats will reduce Diagonal Viewable Image.

+ Universal Apple adaptor standard in box.

 **MITSUBISHI**
DISPLAY PRODUCTS



Diamond Pro 17TX

Diamond Scan 20H

Diamond Pro 21TX

©1996 Mitsubishi Electronics America, Inc. As an Energy Star Partner, Mitsubishi Electronics has determined that these products meet the Energy Star guidelines for energy efficiency. DIAMONDTRON is a trademark and Diamond Pro is a registered trademark of Mitsubishi Electronics America, Inc. Apple is a registered trademark of Apple Computer, Inc.

Circle 261 on reader service card



THIS IS YOU.



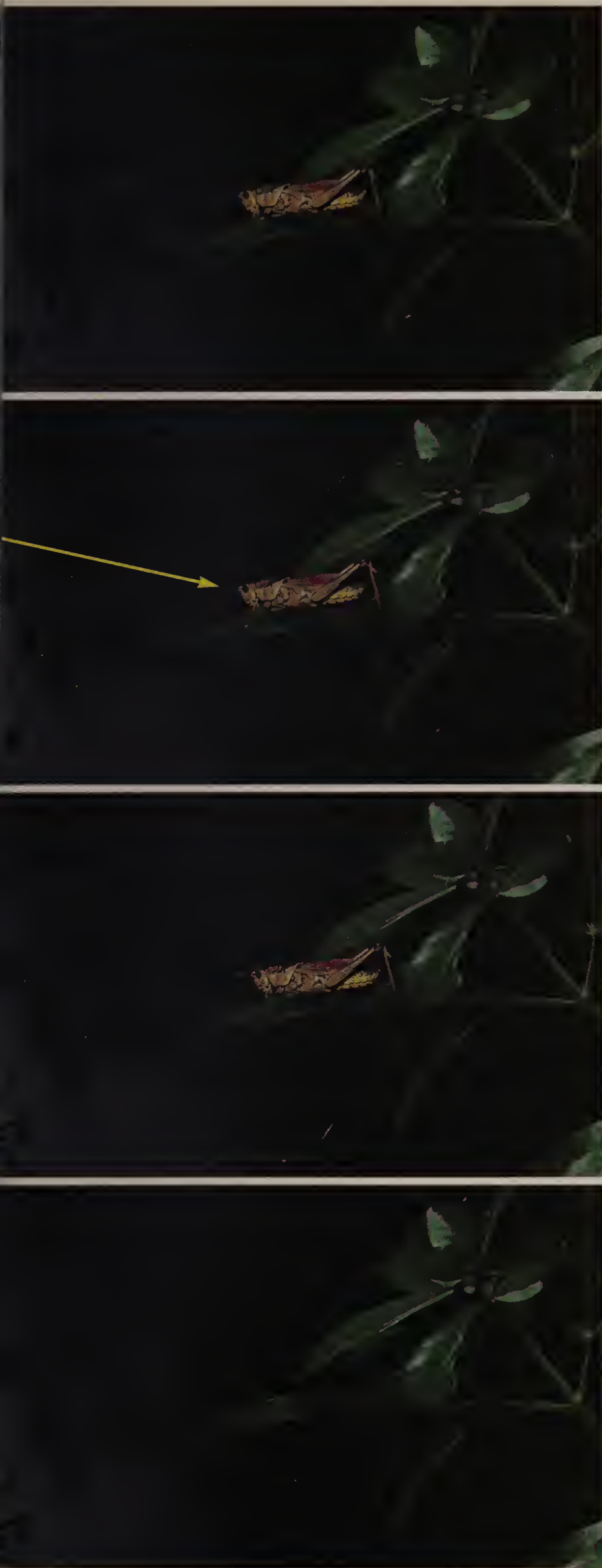
THIS IS YOUR DATA.



THIS IS THE NEW NEC MULTISPIN
8X CD-ROM READER.



ANY QUESTIONS?



INTRODUCING THE NEC MULTISPIN® 8X CD-ROM READER.

Looking for a quick way to retrieve data? How does 1200kb/sec data transfer rate and 140ms access speed sound? The fact is, there's no faster way to get applications running than with the NEC MultiSpin 8X CD-ROM reader.

Of course, our MultiSpin 8X readers offer more than just speed. You'll also get Easy ROM Update™ technology*, which adds security to your investment by letting you easily update to new standards. What's more, our readers are easy to use with a Mac® and they come with a one year limited warranty. So get yourself an NEC MultiSpin 8X CD-ROM reader. After that, you'll have no problem finishing off those hefty portions of data.

For more information, call 1-800-NEC-INFO or reach us via FastFacts™ at 1-800-366-0476 and request document #237801.

Visit NEC's new web site at <http://www.nec.com>

Circle 19 on reader service card

SEE, HEAR AND FEEL THE DIFFERENCE.™

NEC

These
top-notch
Mac
sites will
make you
a smarter
user

The Best Mac Web Sites

BY HOWARD BALDWIN

If surfing is the metaphor for the Internet, then scuba diving should be the metaphor for the World Wide Web. Like the ocean, the Web is a vast and murky place. Diving in randomly, you're just as likely to discover a clear, clean Macintosh site as a clunky site posted by a 14-year-old fan of Smashing Pumpkins.

To save you the trouble of treading water, I've done some diving, and charted the most scenic locations for the Macintosh enthusiast. I've sought out Web sites specifically for Mac aficionados. That covers a lot of people—everyone from user groups and designers, to teachers and consultants, to business folks and futurists who love innovative technology.

To help you find your own special place, I added a side trip on Web search tools so you can divine your own way into the Macintosh world on the Web (and

given the speed with which the Web and its links change, these are handy tools to have around).

One of the Web's greatest attributes is also one of its drawbacks: anyone can build a Web page and post almost anything without benefit of objectivity. That's why—with the exception of the technical-support section—I avoid recommending company Web sites. I also stick to Web sites, as opposed to text-based Internet newsgroups (see *NetSmart*, *Macworld*, July 1996 for other Internet resources). I don't discuss certain topics—such as Macintosh databases—because I didn't find impartial, informative Web sites I liked (for Mac databases try <http://www.claris.com> or the newsgroup *comp.sys.mac.databases*).

Some advice before you go: type carefully. One typo when trying to access a Web page will stop your transmission cold. Think of it not as addressing envelopes, but as dialing telephone numbers—you need to be that accurate. (For the height of simplicity, check out this article on Macworld's own Web site, <http://www.macworld.com>, which has links to the sites mentioned here.)

Also, if you get the Web equivalent of a busy signal ("Server does not have a DNS entry"), don't be afraid to try again. Sometimes a second or even third try works. Go figure. (You can try finding the site using one of the search engines described in the sidebar "Top Search Engines.") And remember that links do expire—even between the time I wrote about it and you read about it—so don't be surprised if occasionally you run into a dead end. With that caveat, dive in.



a.

b.

1449

82

105

22

48

36

312

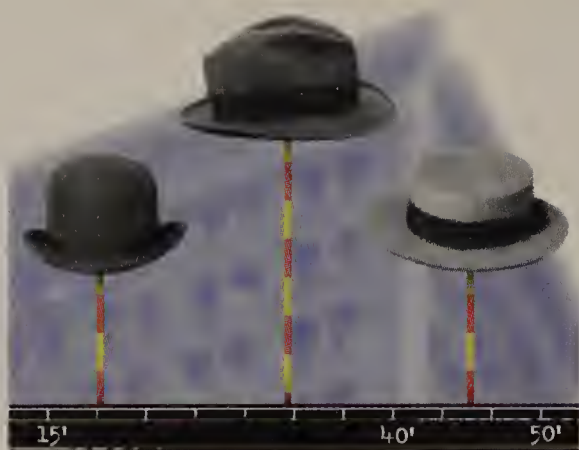
89

c.

13

859

67



MACINTOSH PROFESSIONALS

PROFESSIONALS who want to sharpen their expertise in graphics, desktop publishing, multimedia, and more can find technical details galore for solving problems and advancing their knowledge.

Graphics

It's a tough call to name the best for this category, the bedrock of the Macintosh's strength, but be sure to visit <http://the-tech.mit.edu/KPT/>. Yes, KPT stands for Kai's

Power Tools, but *The Tech* is MIT's student newspaper, which handles the site. It leads off with Kai Krause's original 23 tips and tricks for Adobe Photoshop, including a top-ten list of overlooked basics. It follows up with techniques for creating neon or embossed objects, using PostScript art as stencils, and building realistic shadows from PostScript art. Web designers, make sure you check out the tips from Tom Karlo, a computer-sci-

ence major who maintains the site, and the backgrounds archive, where you can pick out designs for your own Web page (love those *rainbow.jpg* and *fire1.jpg* files).

For more neat Photoshop stuff, visit <http://www.fns.net/~almateus/photos.htm> for its collection of artists' Photoshop work put together by Alf Mateus, a doctoral candidate in chemistry at the University of Florida.

Desktop Publishing

This is where the Macintosh market started, and it's still going strong, as evidenced by a visit to <http://www.teleport.com/~eidos/dtpij/dtpij.html>, the DTP Internet Jumplist. Though it is solely a compilation of site links, maintained by Geoff Peters as a volunteer passion, it's a doozy. Start with his search list, divided into general topics, hardware, and software, and you're off into information about DTP asso-

ciations, fonts, electronic-publishing consultants, and more. In the hardware section you'll find scanning FAQs and tips, sources for recycled ink-jet printer cartridges, and even storage FAQs. Also check out <http://www.printnet.com/PNRes01.html>, a nice compilation of Internet discussion groups, E-mail lists, and vendor sites devoted to prepress and graphics issues.

Video

Anyone interested in digital video—whether hobbyist or professional—should go to <http://www.videomaker.com>. Run by the folks at *Videomaker* magazine, it's an informative classroom, with its glossary of terms, video FAQs (including legal and distribution issues), and conference listings. You can even download video clips from the publication's television show. Also flip the channel to Rick Davis's video page at <http://www.well>



Top Search Engines

We've charted some of the best Macintosh sites in the vast ocean of information called the World Wide Web, but any amateur Jacques Cousteau can tell you that the real joy is in discovery. And the Web is growing faster than plankton. To navigate those unexplored

straits and underwater canyons online, you need to use a Web search engine.

The online search engines are powered by Net robots, indexing software, and human librarians who classify, sort, and arrange the Web into a searchable matrix (see *NetSmart*, May 1996). And they're becoming the most profitable aspect of the Internet. The dozen or so most popular search engines are always among the most visited sites on the Net, and competition is high for the advertising dollars that keep these search tools free of charge.

Despite their similar approaches to scanning the Internet, search engines don't always turn up the same re-

sults. Depending on the type of search you're conducting, one engine might give you more satisfactory results than another. I've sorted the major engines by the kind of searches they perform, and named top picks in each category.

A THOROUGH SEARCH

Top Pick: MetaCrawler
(<http://metacrawler.cs.washington.edu:8080/index.html>)
Runner-up: MotherLoad/
Insane Search
(<http://www.cosmix.com/motherload/insane/>)

PROFICIENT (AND professional) searchers cross-reference results from more than one engine.

CONCEPT SEARCHES

Top Picks: Yahoo
(<http://www.yahoo.com>)
Infoseek Guide
(<http://www.infoseek.com>)

WHEN SEARCHING FOR a concept, you are probably better off using a catalog site. A catalog relies on human editors to sort through URLs gathered with a simple search tool and organize them in categories and classifications. This approach isn't a complete Web search;

.com/user/rld/vidpage.html, which contains a wealth of information about organizations such as the National Association of Broadcasters, the Society of Motion Picture and Television Engineers, leading video researchers and product manufacturers, studios, and viewing utilities from Radius and Progressive Networks.

Multimedia

For information on the Motion Picture Experts Group (MPEG) standard, check out <http://www.crs4.it/HTML/LUIGI/MPEG/mpegfaq.html>, an excellent compilation of data about the standard, provided by the Center for Advanced Studies in Sardinia, of all places. If you're interested in sound, you can learn more about the Musical Instrument Digital Interface (MIDI), at <http://www.eeb.ele.tue.nl/midi/index.html>, which discusses not

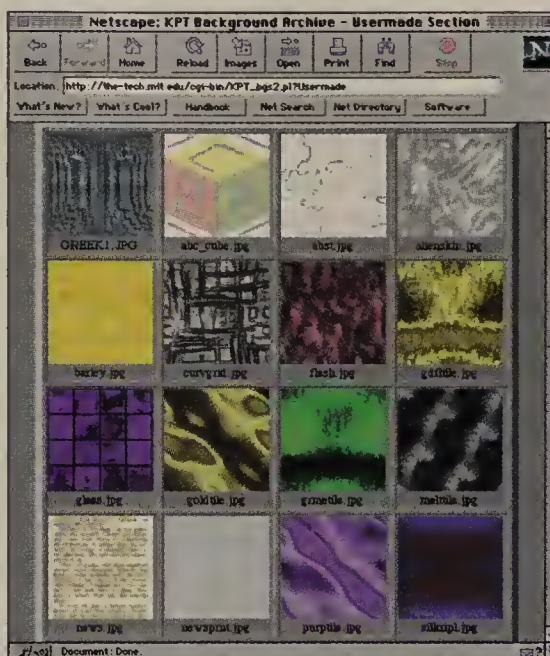
only its history but also the oxymoronic idea of its multiple standards.

Education

Pedagogy and the Web are working hand in hand to improve education. Teachers interested in how to best benefit from the Web should visit <http://web66.coled.umn.edu/>, a page sponsored by 3M and the University of Minnesota that includes a registry of elementary and secondary schools with home pages. The site also includes instructions for teachers who want to set up a Web, FTP, or mail server on a Macintosh, along with a section full of HTML parts to include in classes' Web sites. Also click on the EdWeb Home Room at <http://k12.cnidr.org:90/resource.cntnts.html>, which contains discussions of computers and education, education reforms for the next century, and the role of the Web in education.

Trade Shows

Here's a great place to improve your technical savvy. At trade shows, you're more likely to meet company engineers, whom you may not get to see face to face anywhere else. For unbiased viewpoints, check out www.guerrilla-guide.com, a Web page to help you save "your time, money, and sanity" at trade shows.



Wallpaper to Go

People create backgrounds for Web sites and post them in the Photoshop archives of the MIT school newspaper, *The Tech* (<http://the-tech.mit.edu/KPT/>).

THESE WEB NAVIGATION TOOLS WILL POINT YOU IN THE RIGHT DIRECTION

fewer pages are covered, but the results tend to be more concise and organized by subject. You rely on the catalog's subjective classification and organization. As the Web grows, these catalogs are becoming more of a "best of the Web" than a complete concordance of what's online.

INDEX SEARCHES

Top Pick: Alta Vista (<http://www.altavista.digital.com/>)

Runner-up: Excite (<http://www.excite.com>)

AN INDEX SEARCH CASTS a wider net than a catalog does. Search results from these engines come from a comput-

er-generated index of Web pages and use an algorithm to sort documents to determine their relevancy—for instance, the number of times a keyword appears as well as its proximity to the top of the document. But indexes aren't adept at recognizing context, matching synonyms, or sorting out homonyms. An index search using the keyword *beat* will return more than just information on Allen Ginsberg and William Burroughs; you can also get pages on metronomes, rave music, and fingersnaps.

Both of these picks can also search Usenet newsgroups, which nets the online buzz on a certain topic.

PERSONAL INDEXES

Top Pick: none

TODAY'S SEARCH technology exists on remote sites that you access via a Web browser, but personalized search engines will arrive soon. Companies are developing software that searches the Net according to your tastes and interests, then builds a personal matrix of data that the software searches and updates regularly. Applications like WebCompass from Quarterdeck (310/309-3700, <http://www.quarterdeck.com>), due out this summer for the Mac, or the search technology in Copland and Cyberdog (code-named V-Twin) should help you manage the information

overload that we're all experiencing these days.

Learning Curve

Once you settle on a specific search tool, take the time to learn how to formulate a query. Learning Boolean syntax may seem difficult at first, but it makes a big difference in the accuracy of your searches. All the engines listed here have good instructions for learning how to filter your search results with the basic *and*, *or*, and *not* constructs. That way, you won't search for "Macintoshes" and get fruit trees. The more informed you are about each search engine, the easier it will be to find what you want on the Web.—MATTHEW HAWN



MACINTOSH EXPERTISE

- - - - -

MAC-SPECIFIC Web sites are great places to boost your technical knowledge about the platform, including how much you should pay for a Mac.

Systems

Far be it from me to spread rumors, but Corey Kirk at Simon Fraser University isn't so discreet. On his page, <http://www.imc.sfu.ca/mac/>, he posts the latest reports on Macintosh hardware and software—including Copland (Mac OS 8), Cyberdog, OpenDoc, Gershwin, and more. “Everything here is readily available on the Net,” he says, “so I am not responsible for spying on Apple.” Some of it comes directly from Apple, of course, and Corey denotes that with an Apple logo. He's also built a page specifically on Copland, from which you can download Copland icons and the Aaron utility for making your interface Copland-esque. For another Copland-specific site, browse Austin Shoemaker's page, <http://www.netline.net/~austin/cops/cops.html>, with its basic FAQ on the upcoming Mac OS.

Troubleshooting

Once you buy a Macintosh, you'll find it's so easy to set up that troubleshooting is unnecessary (in our dreams). Of course, with System 7.5.3 and Open Transport 1.1, you

might encounter some glitches. In that case, there's no better destination than <http://www.mrmac.com/mac-mgrs.html>, the Mac Managers Home Page. Maintained by San Diego consultant Michael Robertson, it lists summaries of questions and answers posted by Macintosh managers, the folks in the trenches who are knee-deep in the new and complicated technologies coming out of Cupertino.

Troubleshooters will also like Quill Services' Complete Conflict Compendium at <http://www.islandnet.com/~quill/c3data.html>, which lists

conflicts by platform, product, system, and symptom, no less. It also provides something called The Hmmm Zone, a listing of unexplained crashes that you can add to—just in case the digital equivalent of Columbo can't figure it out.

For the official line on troubleshooting solutions, check out <http://support.info.apple.com/aboutapple/aspn.html>, part of the Apple Solution Professionals Network.

User Groups

Once you've solved your specific setup questions, consider joining a local user group for ongoing problem solving and interaction. Frequently user-group mavens are among the first to hear about new products and updates. User Group Connection, an independent organization, lets you find domestic and international groups at <http://www.ugconnection.org> through an interactive search tool. Just fill in your state, zip code, or area code, and off it goes (it also works for other platforms and operating systems, including Apple II, Newton, OS/2, Windows NT, and Unix). For

Apple's official list, see <http://www2.apple.com/documents/usergroups.html>.

Shopping

Before you go shopping for a Mac, learn what the going rate is for either a new or a used one. There are several excellent resources on the Web. For used machines, log on to the American Computer Exchange, at <http://www.crl.com:80/~amcoex/>, which lets you download a price calculator for used Macs.

Although I promised not to talk about corporate sales stuff, I did love window shopping on one system vendor's home page. At <http://www.powerpc.com>, PowerComputing has built an interactive fill-in-the-blank engine that lets you create the Macintosh clone of your dreams (or your budget). Point and click on the RAM, hard drive, monitor, and everything else you want, and the engine tells you what system to ask for and how much it'll cost. Putting together my own dream desktop machine ran up a potential bill of almost \$23,000, which, coincidental-



Hot Links

HERE'S THE

So you've surfed to your heart's content and you still can't find the Macintosh information you're looking for. Or you think, Wouldn't it be nice to have all the links I want in

one place? Short of creating a truly elegant bookmark system, I suggest you shoot on over to these sites. They contain links to an amazing potpourri of Mac-related sites.

Imagine if Gene Siskel and Roger Ebert had their own Macintosh Web pages, and you've got the idea of, respectively, Jay J. Myers's Macintosh WWW Pointers at <http://www.nmia.com/~jjm/> and Elliotte "Rusty" Harold's The Well Connected Mac at <http://www.macfaq.com>. Besides

links to other sites, they also provide capsule reviews of their favorite hardware, software, utilities, and books. Interested in current events? Each site has an impressive newsstand of Macintosh magazines (including ours and the competition's), newsletters, and E-zines (electronic magazines). In addition, Myers's site has pricing information for used Macs. He's built in links to the Yahoo search engine and the MIT software archives, so you can search for information

ly, was just below the price of the house I grew up in.

Tech Support

Any Macintosh vendor you can name has a Web page, because it's an easy way to make product literature available. But only Macintosh vendors worth their salt let you use their Web pages to make your life easier—for instance, by making their technical-support system accessible. Apple Computer is a leader in this regard; its page at <http://www.support.apple.com> has links to its technical information library and newsgroup archives. At <http://www.claris.com> you'll find FAQs, as well as a valuable tech-support database with built-in search capabilities. There's also a software library with updates, demos, and shareware.

Mac-only word processor developer Nisus wins the award for most candid Web page, at <http://www.nisus-soft.com>. "We have not abandoned Easy Alarms," reads one section, "but the plans for its future are a bit unclear at present. When an update is scheduled, we will announce

it here." And: "There aren't any frequently asked questions about Laser TechFonts. But if any come up, we'll be sure to mention them here!" The site also offers demos, updates, and macros appropriate to Nisus's products.

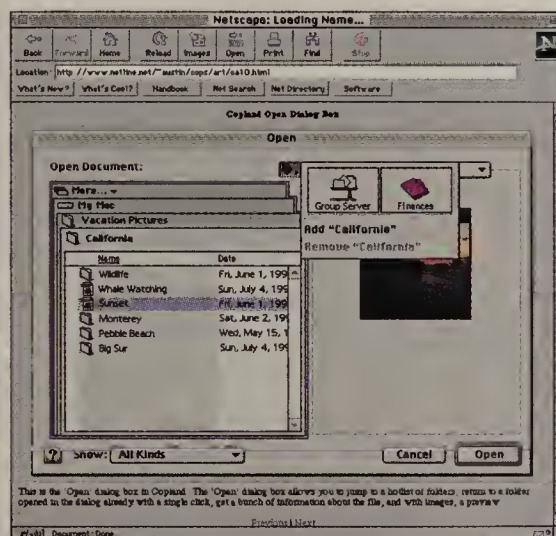
On the hardware side, bravo to Global Village Communication's The Village site (<http://info.globalvillage.com>) for its links to downloadable Internet software and to Quantum's site (<http://www.quantum.com>) for its library of information relating to the future of storage technology. Its Storage Research Center reveals what the engineers are working on at Carnegie-Mellon; Stanford; MIT; the University of California, Berkeley; and Lawrence Livermore National Laboratory. It's enough for us to forgive the anemic utilities section (containing all of five utilities—four for Windows and one for Unix) and tech-support access only through a BBS.

Consultants

If you're looking for ongoing contractual help, visit the Macintosh Consultants

Network, at <http://www.macn.com>. Members focusing on Web development are listed separately from those who do installation, repair, or training. Consultants can fill out a form to list their specialties.

If you're a consultant who wants to develop closer ties to Apple, join the Apple Business Consortium (<http://www.applebiz.com>), an independent group of more than 300 consultants. Not affiliated with Apple, the nonprofit ABC conducts seminars for its business- and finance-oriented members as well as listing their contact information. If you're looking for a consultant, this is a handy site to hit.



Back to the Future At Austin Shoemaker's page (<http://www.netline.net/~austin/cops/cops.html>), you can see how the new Open dialog box in Copland (now called Mac OS 8) makes it easier to open and switch between folders and files.

CLOSEST YOU'LL GET TO A MAC ENCYCLOPEDIA

not found on his page—although that seems unlikely, since you can link to archives at the University of Michigan, the University of California at San Diego and at Los Angeles, Apple, and the University of Texas. Harold offers an excellent list of Macintosh-related trade shows.

Everything Macintosh, at <http://www.cs.brandeis.edu/~xray/macalt.html>, was created by Nathan Raymond specifically because of the poor way in which Netscape Naviga-

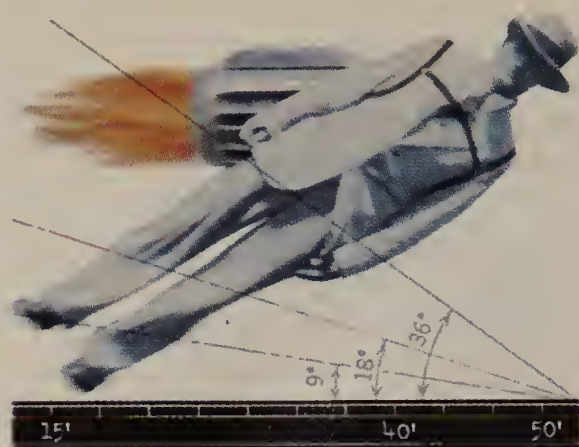
tor 1.X handles bookmarks (this has been improved in Navigator 2.0). It's like one of those amazing Greenwich Village bookstores where bibliophiles go to die. Want to link to Apple's Web sites? Sure. How about finding user groups worldwide, from the Hershey Apple Core in Pennsylvania to the Western Australia Macintosh Users Group? Interested in software development? Games? Newsgroups? The Apple II? Raymond's site offers all of these.

Other highly recommended compendium pages: Michael Yee's Ultimate Macintosh page at http://www.freepress.com/myee/ultimate_mac.html; University of Chicago astronomy professor Robert Lentz's Macintosh Web Resources from "The Rest of Us" at <http://www.astro.nwu.edu/lentz/mac/net/net-rest-of-us.html>; the Cult of Macintosh page at <http://cult-of-mac.utu.fi/>; and MacSense, an E-zine devoted to the Mac, at [http://www.precursor.mb.ca/](http://www.precursor.mb.ca/macsense/default.html)

[macsense/default.html](http://www.precursor.mb.ca/macsense/default.html).

Finally, for a completely biased look at how Macs are being used and should be used, I recommend dipping into Kathy Gill's MacFacts at www.halcyon.com/kegill/mac/; she's compiled a bibliography of articles from the mainstream and technical media about the Mac OS and its obvious superiority to Windows 95.

Oh, and there's also a site that we especially like—you can find it at <http://www.macworld.com>.



MACINTOSH TECHNOLOGIES

ONE OF THE first things I learned about technology is that it's like a movie—if you come in after it's started, just sit down and pay attention. Before long, you'll figure out what's going on. You might feel that if someone's rattling on about QuickTime VR on the Web, and you didn't even know about QTVR on the desktop, it's too late for you. Not true. Some Macintosh-specific technologies, such as QuickTime, are best discussed on Apple Computer's Web sites. For technologies that are egalitarian, like the Internet, or new, like virtual reality, there are independent, informative Web pages.

Internet

If you associate Archie and Veronica with comic-book characters, rather than Internet search tools or databases, the Internet Literacy Consultants' page at <http://www.matisse.net/files/glossary.html> should be your first stop. This excellent glossary will teach you the meaning of, and make you one of, the *digerati* ("The digital version of literati . . . people seen to be knowledgeable, hip, or otherwise in-the-know in regards to the digital revolution"). Also check out the Internet Services Directory at <http://www.comvista.com/FrontDesk.html>; its list of special topics includes running Unix on a Mac and becoming an Internet service provider.

World Wide Web

To delve into the technical underpinnings of the Web, start with the World Wide Web FAQ at <http://www.boutell.com/faq/>, which provides a wealth of basic information about URLs, getting browsers, setting up servers, and building your own Web page. For more specific information on Web publishing, you can't go wrong at <http://www.thegim.org> or <http://www.cwru.edu/help/introHTML/toc.html>, tutorial sites from the Global Institute of Interactive Media and Case Western Reserve University, respectively. The institute's page offers tips categorized by occupation, such as educator, small-business owner, professional, and public official. Case Western's Introduction to HTML covers everything from tags and text structures to anchors and images.

Finally, when you've created your Web page, visit <http://www.winternet.com/~jmg/TopTenF.html>, which conveniently lists the "Top Ten Ways to Tell if You Have a Sucky Web Page," courtesy of Jeffrey Glover. Some examples: you show your résumé, your pets, and construction icons ("I think we *all* know that pages are always under construction").

Networking

Unlike with some technologies, you won't find too

much on the Web specifically about Macintosh networking. The best site I found was <http://oak.forest.net/anma/anma.html>, from the Apple Network Manager's Association. The group is still regional, with chapters in Seattle; Palo Alto, California; and Toronto. Its site features job postings, an Open Transport Q&A page, and information on AppleTalk's routing and tunneling extensions.

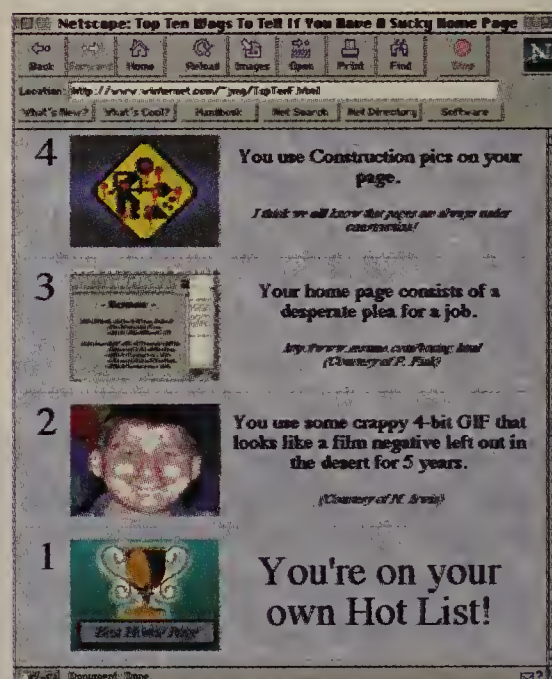
For more networking information, head to <http://tampico.cso.uiuc.edu/nas/nash/mac.html>, put together by the folks in the Computing and Communications Services Office at the University of Illinois at Urbana-Champaign. Mark Sproul maintains the "more than you'll ever want to know about Open Transport"

OpenDoc

Strangely enough, the best information about Apple's cross-platform strategy can be found not on the page for Component Integration Laboratories at <http://www.cilabs.org>, which is in charge of OpenDoc, but rather at <http://www.acl.lanl.gov/sunrise/DistComp/OpenDoc/overview.html>, maintained by Jim George who is affiliated with the Advanced Computing Laboratory at Los Alamos National Laboratory. Go figure.

THE LAST WORD

When Neil Armstrong walked on the moon, someone suggested that his feat wasn't so amazing—what was amazing was that millions of people sat in their living rooms



There's a Right Way and . . .

Top ten tips from Web denizen Jeffrey Glover (<http://www.winternet.com/~jmg/TopTenF.html>) who, with tongue in cheek, explains what not to put on your Web page (later he explains what to do to improve your Web page).

page, while Lynn Ward has posted articles on topics such as installing MacTCP and NCSA Telnet for the Macintosh. Granted, some of what's on this page is specific to the University of Illinois network, but it's still helpful. There's also a glossary of Macintosh networking terms (originally from Cayman Systems) and a list of Usenet newsgroups relating to AppleTalk and Macintosh communications.

and watched him do it. Today, the idea still holds true. It's not so amazing that sitting on our desks are machines that are more powerful than IBM's first mainframes—what's amazing is that using those machines, we can find out anything we want to know about how they work. **m**

Senior editor HOWARD BALDWIN has had an Internet address since 1989, but he should talk—he hasn't even built his own Web page yet.

Secrets

Clip and Save (Time, Keystrokes . . .)

CLIPPING FILES ARE CUTE—BUT WHAT CAN YOU DO WITH THEM?

by Joseph Schorr

System 7.5's drag-and-drop capabilities are, if nothing else, intriguing. There's a certain pleasure in dragging words, pictures, and sounds from, say, the Scrapbook, and watching as stand-alone text, picture, and sound clipping files appear on the desktop. But you have to wonder about the practicality of these little files. Yes, you can make clippings with a simple flick of the wrist, but what can you *do* with them? Can they actually save you time and help you do work—or are they just a cute and clever System 7.5 novelty? Read on for a few practical ways to make clipping files work for you.

Speedy Reference Documents

Suppose you frequently consult a document—say, a Read Me file containing a set of instructions, an agenda, or a phone list. Turn it into a text clipping, and you can look up the information whenever you need it, without launching a separate program—saving you time and conserving RAM. Because you read text clippings with the Finder itself, opening them is much faster than launching a word processor such as SimpleText; even launching the Note Pad or Stickies takes longer (and requires more RAM). And this technique works on more than just snippets of text; a clipping file holds up to 32K—about four times the text in this month's *Secrets* column. For that matter,



you can drag a picture from the Scrapbook to create a quick reference graphic.

Drag-and-Drop Scissors

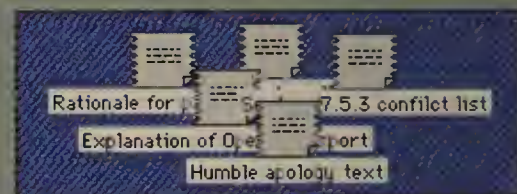
To create a text clipping, open a text document using SimpleText—or a drag-and-drop-aware program such as ClarisWorks 4.04 or WordPerfect 3.5—and drag the selected text you want to extract to the desktop. (A program that's fully drag-and-drop-aware allows you to drag selections not just between documents, but from a document onto the desktop, and vice versa.) This creates a new desk-

top clipping file with the generic name "text clipping." Just rename the clipping to reflect its contents.

You can leave the clipping on the desktop (double-click to open it); add it to the Apple Menu (drop it into the Apple Menu Items folder); or with System 7.5.1 or later, drag it straight to the Launcher to create a button that opens the clipping with one click. Of course, you don't have to drag text to the *desktop* to make a clipping; you can drag it into any Finder window or onto a folder icon. *continues*

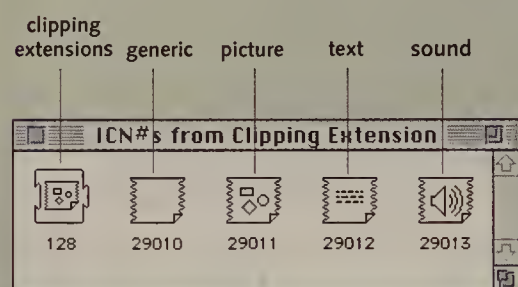
Slimmer, Trimmer Clipping Files

ONCE YOU DISCOVER THE JOY of using clipping files to capture and shuttle information from program to program, you may be tempted to drag and drop text like crazy—until you wind up with a desktop littered with clipping icons. For a less cluttered look, you can use ResEdit to create iconless clipping files.

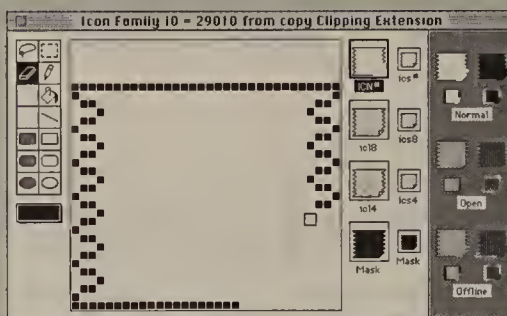


1 Make a copy of the Clipping Extension file, located in System Folder: Extensions, and open the copy with ResEdit.

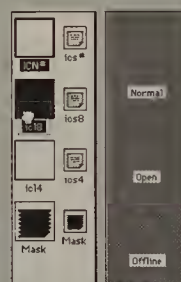
2 Double-click on the ICN# resource icon to open the file's five ICN# resources.



3 Double-click on resource 29010 to open the icon editor, then erase the current icon so that the drawing field is completely blank (double-clicking on the Eraser tool erases the whole icon automatically). Now drag down the

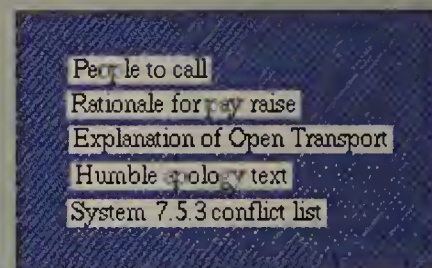


topmost blank box (labeled ICN#) and drop it on the box labeled icl8 to erase that icon as well (A). Repeat this drag-and-drop procedure with all the other icons in the dialog box, including the two labeled Mask, so that they are all blank. The result will be a totally invisible icon, as shown by the preview (B). Close the dialog box.



4 Repeat step 3 for resources 29011, 29012, and 29013. When you're done, save your changes and close the file. Don't worry about resource 128, which is the icon for the clipping extension file itself.

5 Replace your old Clipping Extension with the edited copy, and restart. From now on, new clipping files materialize on your desktop with names but no icons, so you can arrange them more compactly. Double-clicking on the name opens the clipping file.



To make a text clipping from a document created with a program (say, Microsoft Word) that doesn't support full drag-and-drop, copy the desired text and paste it into the Note Pad, a Stickies note, or the Scrapbook; from there drag the text onto the desktop. To turn a read-only file (such as a Read Me file bearing the standard newspaper icon) into a clipping, you must first open it using the Open command from within a word processor *other than* TeachText or SimpleText and then drag the contents to the desktop (or, if necessary, copy the text into a program that allows you to drag to the desktop).

Clip Now, Organize Later

I know a guy who collects jokes over the Internet. Because he uses Claris Mailer—a program that supports full drag and drop—he can clip and save his jokes almost effortlessly. Every time he gets a piece of E-mail containing a joke, he just drags the text containing the joke directly into a folder named Jokes on his desk-

top. This approach eliminates the need to copy and paste text. Rather than saving entire messages with lots of extraneous information, he quickly extracts each joke and saves it as a clipping for future reference. You can use the same technique to collect information from a number of documents, dragging and dropping individual paragraphs and sentences to the Finder as soon as you locate them.

If you gather information this way, you'll be able to turn your folderful of individual clippings into a single document with ease. Open a new document in a drag-and-drop-aware word processor, select all the clipping files, and drag them en masse to the document. If you want the clippings to appear in a specific order, select them one by one (by shift-clicking), in the order you want them to appear. When you drag the files to the document, the word processor imports them in that order.

Even if your word processor isn't drag-and-drop aware, you can still trans-

fer text from a clipping to another document. You can't select text in a clipping, but you *can* copy it. Open each text clipping, copy it (⌘-C), then switch to your word processor and paste (⌘-V).

Customized Clippings

Text clippings can contain two kinds of text—plain or styled. When you drag styled text to create a clipping, the formatting—font, size, and so on—is preserved. Drag plain text (such as text from the Note Pad), and it appears in a default clipping font. It may seem that you can't change this font; there's no Font menu in a clipping file. But it turns out the default clipping font is the font used for all text in Finder views. By choosing a new font in the Views control panel, you can view (but not truly reformat) text clippings in any font available in your system. **m**

Contributing editor JOSEPH SCHORR is coauthor of *Macworld Mac and Power Mac Secrets*, third edition (IDG Books Worldwide, 1996).



Avery Ink Jet Labels
White and Clear

Avery Laminated & Regular
Rotary Cards



Avery Laser or Ink Jet
Note Cards

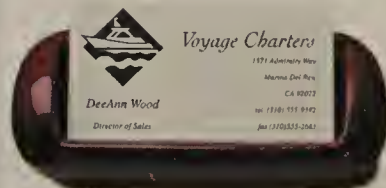


Avery Laser
Videotape Labels



Avery Laser
Audio Tape Labels

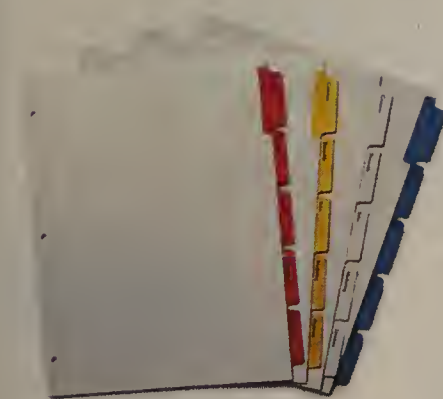
What good is having
technology if you don't
take advantage of it?



Avery Laser or Ink Jet
Business Cards



Avery Laser or Ink Jet
Diskette Labels



Avery Index Maker® Dividers
Laser or Ink Jet



Avery LETTER
'N LABEL™
Quality Bond
Paper and
Address Label
in One

Avery Laser
or Ink Jet
File Folder
Labels



You paid all that money for all that technology, it's time you got your money's worth. Avery® has a full line of products that let you make better use of your laser or ink jet printer. They'll keep you organized and working more efficiently, easily. In fact, Avery formats are already in the software you're using. We'll even send you a free sample kit while supplies last. So give us a call. And start getting more out of your printer.

FOR A FREE SAMPLE KIT, CALL TOLL FREE:

1 - 8 8 8 - 2 8 3 - 7 9 7 2 e x t . 7 6 4

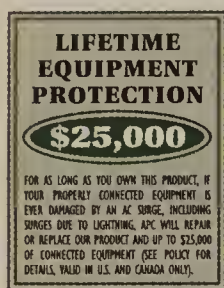
Circle 17 on reader service card



AVERY®

Are you getting the performance out of

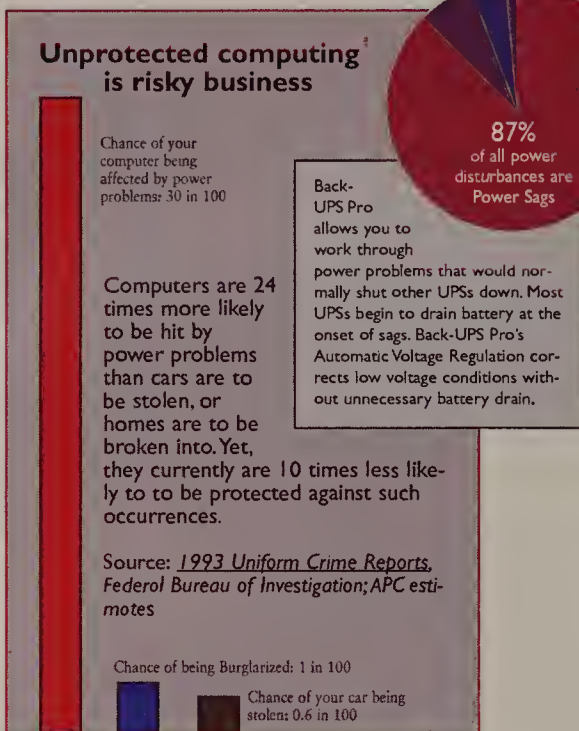
New Back-UPS[®] Pro[™] increases productivity and peace of mind.



If you're using a computer, few things are more certain or more discouraging than power problems. If you haven't yet lost productivity and data to a blackout, crashed a hard drive, or toasted a modem, you will. It's almost a statistical certainty.

More than 4,000,000 smart computer users protect against the inevitable with affordable: award winning power protection from APC. One prevented problem is all it takes to pay for proper power protection many times over.

Back-UPS Pro, protects all power paths leading to your Mac, keeping your equipment safe from power events including surges, swells, brownouts, and blackouts - and keeping you safe from downtime that power problems inevitably produce. Back-UPS Pro provides high-performance workstation protection, preventing data loss, increasing your system's lifespan, and improving productivity.



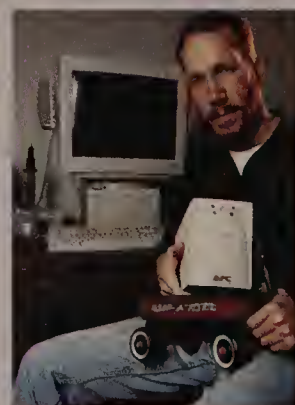
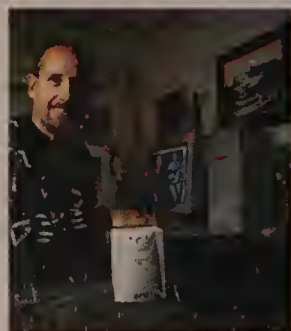
computer. Automatic Voltage Regulation allows you to work through power problems by increasing voltage during brownouts and decreasing voltage during surges without draining battery power. In environments where chronic brownouts and overvoltages are the norm, the line-interactive Back-UPS Pro is essential.

BACK-UPS PRO UPSs FEATURE:

- Instantaneous battery backup to protect your data against a total loss of power.
- Automatic Voltage Regulation (AVR) provides the edge you need for full protection against extended brownouts or overvoltages without draining the battery.
- CellGuard[™] intelligent battery management dramatically extends battery life with fast recharge and deep discharge protection. Battery diagnostics warn you before problems occur.
- Batteries are quickly and safely user-replaceable without needing to shut your system down. (Batteries last 3-6 years under normal use).
- \$25,000 lifetime repair/replace guarantee against surge damage to your equipment (see details).
- Built-in phone line/10Base-T network cable surge protection for a bulletproof response to anything Mother Nature sends in your direction.

UNMATCHED PROTECTION WITH AUTOMATIC VOLTAGE REGULATION

A study by Bell Labs indicates that 87% of all power disturbances come in the form of a power sag, or "brownout." Most UPSs begin to drain battery at the onset of sags, giving you a few moments to shutdown your



MORE THAN 4,000,000 SATISFIED USERS SAY "PROTECT ME! WITH APC"

CLOCKWISE: "After 13 plus years in the computer industry (with both Apple and Digital), I have changed directions and now live in the Santa Cruz mountains, where the power is as bad as the view is beautiful," says Harald Striepe. "Now I spend most of my time consulting and writing fiction. The power is the worst during rainy season and brownouts are a daily occurrence. But, not a problem for me since I got my Back-UPS Pro with AVR - now, I work through the rainstorms."

"I am the Product Development manager for Radio Flyer," says Antonio Pasin. "But quite often, I work at home, where I pay for all the equipment...my TV has been zapped in the past (it turned GREEN!). Here, I don't have an extra \$1200 to replace the DAT tape backup...an investment in APC is more cost effective for me. But besides just protecting the hardware, I look it as protecting my media...I have lots of time invested in my data, and Back-UPS Pro protects that as well. Not to mention the unit is well-designed, easy to use, and APC provides great customer service to boot."

"I'm a graphic designer/illustrator, using mostly 9500/132 and 8100/80 PowerMacs, in central Florida, the lightning capital of the world," said Thomas Sessions of Sessions Design in Orlando. "We lose power on a weekly basis and have constant outages...I've used APC for at least 8 years, but Back-UPS Pro is my current favorite - it has a smaller footprint and I can plug in my modem. Before UPSs, when we heard a thunderstorm, you would just hurry and try to get the work done, then just shut down- unplug the machines and take a break...now I wouldn't work without one...particularly in this deadline oriented industry."

So don't wait for the school of high shocks to teach you an expensive lesson about Mac performance. Ask for APC today.



Visit APC's PowerPage[™] on the WorldWide Web at <http://www.apcc.com>



Protect Your Mac. FREE 60-page Power Protection Handbook

What are the myths and musts of power protection? What are the 10 most common power protection mistakes? The top tips for adding reliability to your Mac? Get your FREE copy and find out!

☐ YES! I'm interested in Back-UPS Pro for advanced PowerMac protection. Please send my FREE handbook and Back-UPS Pro information.

NameTitle:
Company:
Street:
.....
City:State: ...Zip:
Phone:Fax:
E-Mail Address:
Brands of UPS used?
Macs on site?
☐ Reseller ☐ End User



Dept. D7



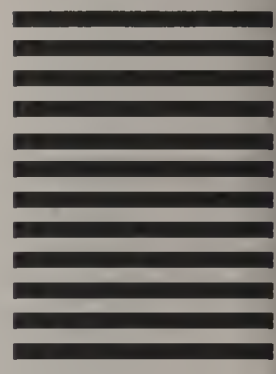
NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS MAIL PERMIT NO. 36 WEST KINGSTON, RI

POSTAGE WILL BE PAID BY ADDRESSEE



Dept. D7
132 Fairgrounds Road
P.O. Box 278
West Kingston, RI 02892-9920



most your Mac?

"Ultimately, it's more a question of when - and not if - you should buy a UPS... UPS power protection has never been cheaper or more convenient"

MacWEEK

"If you have a server and don't have a UPS, you're playing with fire."

MacUser

"★★★★...Should be standard equipment on every desktop... effective, affordable, designed to last."

- PC Computing

"99 out of 100"

- Computer Gaming World

"Don't take chances. Get the ultimate protection... from APC."

- PC World



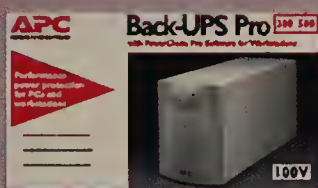
Available at:

COMPUSA
THE COMPUTER SUPERSTORE.

COMPUTER City

CHOOSING THE RIGHT APC PROTECTION

For advanced Mac protection including Automatic Voltage Regulation, CellGuard battery management and phone line/10Base-T protection, choose the Back-UPS Pro. For longer run-time choose a higher VA rating. For basic Mac protection choose from the Back-UPS® family.



Back-UPS Pro: Advanced Mac Protection
Perfect for PowerMac

Model	VA Rating	List Price
Back-UPS Pro PNP 280	280	\$199
Back-UPS Pro PNP 420	420	\$339
Back-UPS Pro PNP 650	650	\$419
Back-UPS Pro 1000	1000	\$589
Back-UPS Pro 1400	1400	\$759



Back-UPS: Basic Mac Protection
Perfect for Performa

Model	VA Rating	List Price
Back-UPS 200	200	\$119
Back-UPS 280	280	\$139
Back-UPS 400	400	\$199
Back-UPS 450	450	\$254
Back-UPS 600	600	\$359
Back-UPS 900	900	\$529
Back-UPS 1250	1250	\$689

APC products have won more awards for excellence than all other brands combined. Call for a Free 60-page Power Protection handbook.

APC
AMERICAN POWER CONVERSION

800-800-4APC

Dept D7

fax: 401-788-2797 / PowerFax™: 800-347-FAXX

CompuServe: GO APC SUPPORT

Internet: apctech@apcc.com

132 Fairgrounds Rd., W. Kingston RI 02892 USA

The Most Complete Suite of Internet Software Available

• ACROBATE • NEWSWATCHER • QUICKTIME™ • JPEG VIEW • CU-SEEME™ • STREAMWORKS™

World Wide Web



Communications



Video and Audio Players



Document Readers




Utilities



Auto Account Registration




LUCKMAN'S
NET COMMANDER
Your All-in-One Internet Package



EASY TO SET UP - EASY TO USE - EASY ACCESS

FOR MACINTOSH™
& MAC™ O/S


Luckman Interactive, Inc.™

Windows® 3.1 & Windows® 95 version also available.

Luckman's Net Commander is an all-in-one Internet software package that has everything you need. Fully experience the Net starting with single button Internet registration, automatic set up and configuration of 18 Internet applications including E-mail, NewsWatcher, audio and video players and much more.

The Internet will be yours to command!



Luckman Interactive, Inc.™

Call Today:

1-800-711-2676

E-Mail: info@luckman.com

<http://www.luckman.com>

1055 West 7th Street, Los Angeles, CA 90017

\$79.00 SRP

• ENHANCED MOSAIC™ • COMPLETE SET OF INTERNET UTILITIES • EUDORA® E-MAIL •

©1995, 1996 Luckman Interactive, Inc. All rights reserved. Luckman's Net Commander, Your All-In-One Internet Package, NetCall, Luckman Interactive and the Luckman logo are trademarks of Luckman Interactive, Inc. All others are trademarks of their respective owners.

Circle 65 on reader service card

Quick Tips

Tips, Tricks, and Shortcuts

by Lon Poole

Sometimes America Online refuses to open, complaining that it can't find its Online Database file even though the file is right where it's supposed to be (inside AOL's Online Files folder). This usually means the Online Database file is damaged. Ideally you could fix the problem by replacing the damaged file with a recent backup of it. If you don't have a recent backup, or if the backup is also damaged, you could reinstall the America Online software, but you'd have to sit through all those artwork downloads again. Martin Kaufmann of Waco, Texas, suggests that before doing that, you try resurrecting the Online Database file with ResEdit. Here's how: Open the Online Database file with ResEdit. Most likely ResEdit will tell you the file appears to be damaged and will offer to create a new file using undamaged resources from the Online Database copy. After ResEdit makes the new file, switch to the Finder and drag the old Online Database file to the Trash. Change the name of the new file ResEdit created from Online Database (the undamaged file) to Online Database. Now you should be able to launch America Online and connect. (According to America Online, version 2.7 of the AOL software can fix damaged online database files without resorting to ResEdit.)

Printing Two Sides

Q How can I automate double-sided printing? I am using Claris's FileMaker Pro, which cannot print only odd or only even pages.

CURT J. ZOLLER
Mission Viejo, California

A If you don't have QuickDraw GX installed (it comes with System 7.5 but is installed separately), use the utility ClickBook from BookMaker (\$69.95; 415/354-8161, <http://www.clickbook.com>). In addition to simple double-sided printing, ClickBook can print multiple page images per side so you can print booklets and so forth. ClickBook works with FileMaker Pro and most other applications, but not with QuarkXPress or Adobe PageMaker. It works with all Apple and Hewlett-Packard laser and ink-jet printers, but does not work with



Epson's Color Stylus line of printers.

If you do have QuickDraw GX installed (or want to install it), use Peirce Print Tools 1.0 from Peirce Software (\$129, or mention Pierce's Web page and get it for \$69.95; 408/295-9760, <http://www.peircesw.com/>). It adds nine new printing capabilities to every application (even if the application hasn't been updated to use the GX print dialog box), including double-sided printing, multiple pages per side, and watermarks. Peirce Print Tools works with all applications,

and with all printers that have a GX driver. Most printers and fax-modem software have a GX driver; there's a list on the GX Fan Club's Web site, at <http://www.ixmedia.com/quickgx/gxdrivers.html>.

Mac Files through Windows

Q I am an avid Mac user, but am restricted by a workplace that has only PC access to the World Wide Web. I have no modem or online service with my Mac at home. Is Mac software downloaded to a floppy on my PC at work usable on my home machine? If so, what's the correct procedure?

DAVID STUBBLEBINE
Huron, Ohio

A Downloading Mac software and nontext document files on a Windows or DOS PC is no problem because in Internet archives most Mac files are encoded as plain text files, which can be transferred to and from almost every kind of computer. An encoded file's name has a suffix that indicates the type of encoding used on it. By far the most common suffix for Mac files on the Internet is .hqx, which indicates BinHex encoding.

After downloading, copy the .hqx encoded files to a PC floppy. Your Mac can read PC floppies as long as it has the PC Exchange control panel installed and turned on. (PC Exchange is a standard part of System 7.5.) If you download a file larger than 1.4MB to your PC's hard drive, you can use a PC word processor to save pieces of it on multiple PC floppies, and then use a Mac word processor to combine the pieces and save the whole file on your Mac's hard drive.

continues

Macworld DIRECTORY

Hot new directory

Don't miss
**Macworld
Directory**,
the **hottest**
new section
to hit *Macworld*.

Macworld
Directory
is your one-stop
buying resource,
putting you in
touch with the
products and
services you're
looking for.
You'll find
Macworld
Directory
after the Macworld
Shopper section.

Before you can open an encoded Mac file, you must decode it and in some cases decompress it. The free Mac utility StuffIt Expander from Aladdin Systems (408/761-6200, <http://www.aladdinsys.com/>) decodes BinHex-encoded files and, if necessary, expands files that were compressed prior to being encoded. StuffIt Expander also handles files whose names end with .sit, .cpt, or .bin. To handle files that end with .zip, .zrc, .pkg, .gz, .z, or .uu, you need Aladdin's \$30 shareware Drop-Stuff with Expander Enhancer.

You can get StuffIt Expander online as an encoded file (the only way Mac software can exist online), but you can't use it unless you can decode it. To circumvent

this catch-22 (which is described in detail at <http://www.aladdinsys.com/obstufex.htm>), get a copy of StuffIt Expander on a floppy disk from a friend or a user group, buy one of the many Internet books that include it on a floppy or CD-ROM, or order it from Aladdin.

Control-Strip Control

Q Control Strip sits near the bottom of my Power Mac 7500's screen. Can I move Control Strip around the screen?

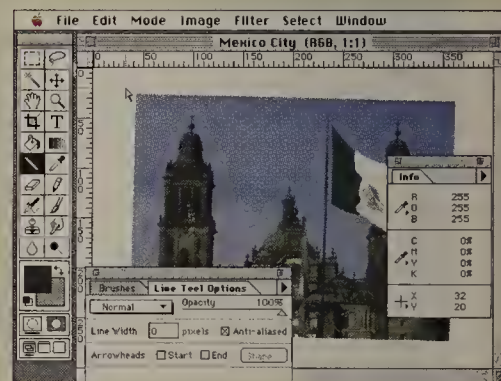
GREG CURRIE
Barrie, Ontario, Canada

continues

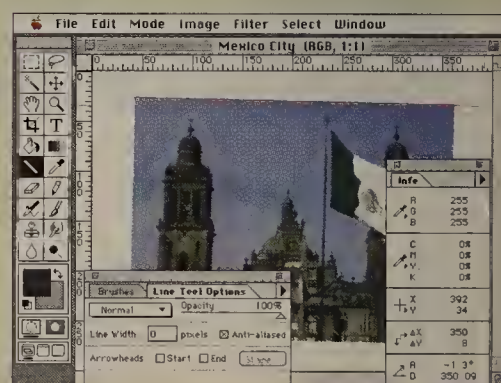
Fixing Crooked Scans

Here is a quick and painless way to straighten scanned images in Adobe Photoshop, contributed by Carla Michelini of New York.

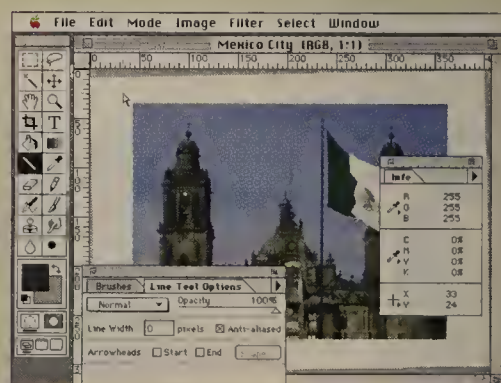
1. Select the straight line tool, and in the Options palette, set the Line Width to 0. Be sure to position the Info palette so you can see all of it when it expands to its full height. If the Info palette is hidden, display it by choosing Show Info from the Palette submenu (located under the Window menu).



2. Click at the top left corner of the picture, then drag to the top right corner as if drawing a rule across the top of the picture. Do not release the mouse button until you've noted or jotted down the angle displayed at the bottom of the Info palette. (When you release the mouse button, no rule actually appears because of the 0 line width.)



3. Straighten the picture with the Arbitrary Rotate command. In the Arbitrary Rotate dialog box (not shown), enter the angle you noted when you drew the invisible rule, and select a rotation direction. Enter the rotation angle as a positive number; entering a negative angle reverses the rotation direction.



UNLIMITED INTERNET ACCESS FOR \$19.95 A MONTH.

**It's like getting a Porsche
for the price of a VW Bus.**

Get on the Internet, using the world's most reliable network, with high-speed local dial-up throughout 92% of the U.S. and 24-hour customer support. Pretty much the only things you're not getting are leather seats and a really trick stereo.



SPRYNET™

info@sprynet.com • 1-800-SPRYNET • www.sprynet.com

©1996 SPRY Incorporated. All rights reserved. SPRY is a registered trademark, and SPRYNET is a trademark of CompuServe Incorporated. All other names are registered trademarks of their respective companies. All prices are in US\$. You may have to pay a surcharge when you access the service outside the USA. CompuServe is an H & R Block company.

Circle 84 on reader service card

Small colleges can help you make it big.

Just ask: Michael D. Eisner—Chairman/CEO, The Walt Disney Company, Denison University, Ohio; William C. Springer—President, Heinz North America, Gannon University, Pennsylvania; Donna Wolf Steigerwaldt—Chairman of the Board/CEO, Jockey International, Inc., Colorado College, Colorado; James W. Near—Chairman/CEO, Wendy's International, Hanover College, Indiana; John W. Johnstone, Jr.—Chairman, President & CEO, Olin Corporation, Hartwick College, New York; William V. Roberti—President/CEO, Brooks Brothers, Sacred Heart University, Connecticut.

Some of our country's most successful people went to small colleges where size, faculty, and curriculum combined to give them the education, skills, and confidence to make it big in today's world.

A small college can help you make it big, too. To learn more about small independent colleges, contact: Council of Independent Colleges, One Dupont Circle, Suite 320G, Washington, D.C. 20036.

Sponsored by **CIC** The Council of Independent Colleges

QUICK TIPS

A Press the option key and drag to move Control Strip up and down. You can also move it to the opposite edge of the screen—but not to the middle; Control Strip must touch the edge of the screen. You can also option-drag items on Control Strip to rearrange them. On a Mac with Control Strip installed, Macintosh Guide (in the Guide menu when the Finder is active) has answers and step-by-step instructions for these and other Control Strip tips. Control Strip is normally installed on PowerBooks that have System 7.5 or later and on desktop Macs that have System 7.5.2 or 7.5.3. To use Control Strip on a desktop Mac with System 7.5.1 or earlier, use Robert Mah's free Control Strip Patcher, available from Macworld Online (<http://www.macworld.com>) and America Online (keyword *Macworld*).

Excessive System RAM

Q My PowerBook 160 came with 4MB of RAM. I maxed it to 14MB but don't have any more memory available for opening programs. The system software is now taking up more than 9MB of memory. How can I control the amount of RAM my system uses?

PEDRO JOSE LAHOZ
Torreón, Coahuila, Mexico

A You need to turn on 32-Bit Addressing in the Memory control panel and restart your Mac. When that option is off, the Mac OS uses 24-bit addressing and can access only 8MB of RAM, regardless of the amount actually installed. Any RAM over the 8MB limit is simply added to the System Software Total Memory bar—even though it's not being used—in the Finder's About This Macintosh window. Disk cache size and RAM disk size (if any) are two other Memory settings that affect reported system software size.

Autoclosing Find File

TIP After installing System 7.5.3, you can quit Find File while opening a found item by holding down the option key and double-clicking the item in Find File's Items Found window. This trick saves you the trouble of reactivating Find File in order to quit it.

MICHAEL ALLURED
Neshkoro, Wisconsin

The option-key shortcut also works with the Get Info, Sharing, Open Enclosing Item, and Print commands in Find File 1.1.2, which comes with System 7.5.3, and it also seems to work with earlier versions of System 7.5. When Find File 1.1.2 is active, you can read about scads more shortcuts by choosing Find File Shortcuts from the Guide menu.—L.P.

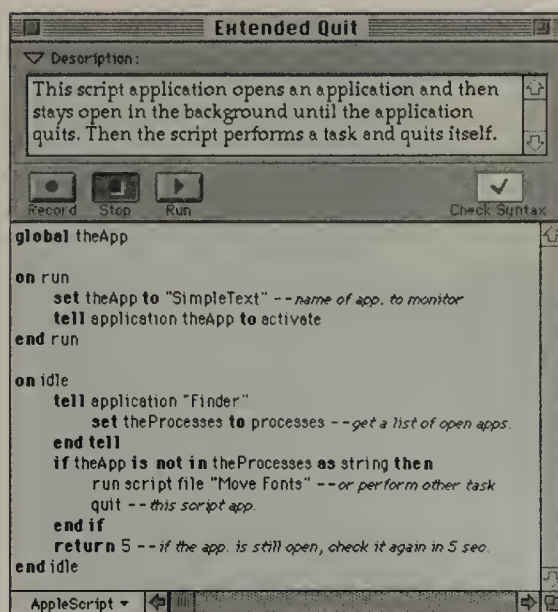
Printer Hygiene

TIP When my Hewlett-Packard Deskwriter 550C printer began having trouble pulling paper from the tray, cleaning the three gray paper-feed rollers using HP's method (water on a lint-free cloth) did not help. Here's what worked for me. I bought a metal nail file with a fine, sandpaper-like surface. (I did not use an emery board because I did not want to risk getting grit in the printer.) I removed the paper tray and lifted the printer cover, then held the nail file lightly against the bottom of each roller while running the printer through its start-up cycle. The rollers turn about one revolution during start-up; I restarted the printer twice for each roller. I worked on the bottom of the rollers because the print-cartridge carrier moves in front of the rollers as they turn. I then cleaned each roller with a water-dampened cloth using the same restart procedure. The printer now feeds paper like new. It can even feed a partly used 8½-by-11-inch label sheet.

TIM SPIVEY
Tifton, Georgia

Extended Quit

TIP Few programs let you change what happens when you choose Quit from the File menu, although you can use AppleScript to quit an application and then automatically perform tasks such as moving uncommonly used fonts out of the Fonts folder (see *Quick Tips*, May 1996). Hideyuki Fujioka of Bryn Mawr, Pennsylvania, has another method. Rather than trying to doctor the Quit command, Fujioka suggests creating an AppleScript application that approaches the problem from the other direction. First, the AppleScript application opens the application whose quit behavior you want to extend; second, the AppleScript application stays open in the background



Quitting Time This AppleScript application effectively extends the Quit command of another application. Customize the script by changing the name of the application (from *SimpleText* to your chosen app) and substituting statements (in place of the "run script file . . ." statement) to perform the tasks you want done at quitting time.

until the application it opened is closed; and third, the AppleScript application performs the desired tasks (moving fonts or whatever) and quits itself. "Quitting Time" shows a simple example. You create an AppleScript application with a script editor by saving a script with the Kind option set to Application and the Stay Open option turned on. Fujioka notes there are a couple of drawbacks you should consider before adopting this method: while open in the background, the AppleScript application occupies 200K of memory and may slow down the foreground process a little. Also, if you like to double-click Finder icons to open documents created by the application in question, you have to be sure to run the AppleScript application beforehand (perhaps by putting it in the Startup Items folder). **m**

We pay from \$25 to \$100 for tips published here. Send questions or tips on how to use Macs, peripherals, or software (by mail or electronically) to *Quick Tips*, Lon Poole, at the address listed in *How to Contact Macworld* at the front of the magazine (include your address and phone number). All published submissions become the property of *Macworld*. Due to the high volume of mail received, we're unable to provide personal responses.

LON POOLE answers readers' questions and selects reader-submitted tips for this monthly column. His latest book is *Macworld System 7.5 Bible*, third edition (IDG Books Worldwide, 1994).

Macworld ONLINE

The Ultimate Macintosh Resource Site
for everyone who owns a Macintosh!

NEW!
SoftwareLibrary

The Web's best
shareware:
handpicked and
carefully culled
by Macworld.



Plus...check out
Macworld Online's
other hot areas:
late-breaking
editorial on Apple,
GameLine,
Product Directory,
fully-searchable
back issues,
and more.



Macworld Online.
It's everything
you need.

<http://www.macworld.com>

hey, Macintosh users...

Introducing



Surfwatch

chat

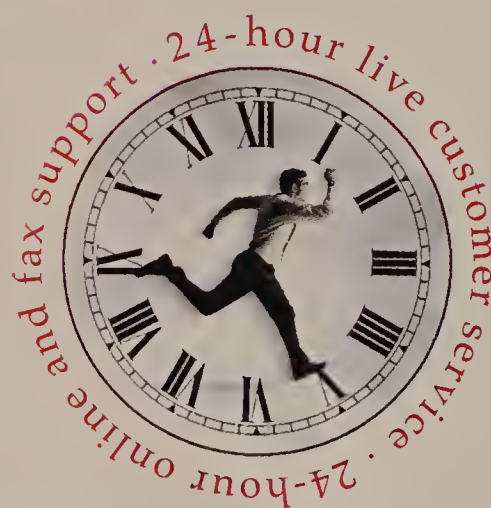
E-mail

NetCruiser

Netscape



NETCOMplete!



flat-rate pricing
nationwide unlimited access



free personal services:

news, investment,

research, home pages,

and more to come.

WHEN IT COMES TO MAKING THE
MOST OF THE **INTERNET**,
NOBODY DOES IT BETTER THAN
NETCOMplete. IN ONE
BOX YOU GET ALL YOU NEED FOR THE
NET. SO SEE YOUR LOCAL RETAILER OR
CALL **1-800-NETCOM-1**.

Circle 54 on reader service card



NETCOM

www.netcom.com

Service for both MAC and PC available in USA and Canada.
©1996 NETCOM, Inc. All rights reserved. All product and company
names are the property of their respective owners.

Song of Myself: Personal Publishing on the Net

by Matthew Hawn

Forget Marshall McLuhan. The real patron saint of the Internet ought to be Walt Whitman. Whitman claimed his *Leaves of Grass* was "an attempt, from first to last, to put a Person, a human being . . . freely, fully and truly on record." I can't think of a better guideline for creating personal Web pages. Without personal pages, the Web is just another place to buy cubic-zirconium necklaces and designer chocolate. If the Net is going to be the virtual town hall promised by politicians and technology mavens, we need to populate it with the voices of individuals. We have to become creators as well as consumers of information.

Whether you are putting up pictures of your spelunking adventures in an abandoned underground missile silo (<http://www.xvt.com/users/kevink/silo/>) or your sardonic reviews of current movies (<http://internet-plaza.net/zone/mrcranky/>), the Web is a perfect place to exercise your First Amendment rights at a low cost.

Being a Net publisher doesn't mean you have to follow the prevailing consumer fetish for high-priced toys and the latest silicon. Since you're reading this magazine, you

probably already have one of the best tools for publishing on the Net: a Mac. It doesn't have to be top of the line, it just needs to be online.

This Old Web Page

To get started, pull out a pencil and some paper. Sketch what you want on your Web pages. Think of your information as pieces in a 3-D chess game where each page is

tant to link all your pages when there are a half-dozen; but when that number grows to 50, as it surely will, you'll want a coherent, nonlinear way to browse this information. Create a hyperlinked table of contents or visual map of your pages, because people will browse it in different ways. It's also wise to include your E-mail address so people can contact

better understanding of how the Web works if you build your pages "by hand" using a text editor like SimpleText or a word processor to enter the HTML code. If you use a word processor, remember to save your HTML files as text-only—otherwise you'll inadvertently add some invisible formatting that will appear as gibberish on your pages.

Don't let HTML intimidate you. You can learn the basics in a few hours. (See "Web Worthy" for pointers to a few good HTML primers on the Web.) The best book for learning HTML is still Laura Lemay's *Teach Yourself Web Publishing with HTML in 14 Days* (\$39.99; Sams.net, 1995; 317/228-4366, <http://www.mcp.com>). I also recommend using the "view source" feature on your Web browser to look behind the scenes and learn how your favorite Web pages are put together.

Be judicious in your use of graphics and multimedia objects. Despite the hype of multimedia, the majority of Web pages are still most effective as text mixed with static images. For tips on preparing graphics for your pages, see "Optimizing Web and CD-ROM Graphics," *Media*, May 1996.

Choosing a Publisher-Friendly ISP

Your final step as a personal Web publisher is to find a



only a few clicks away from any other page—up, down, or sideways. Each hyperlink is both an exit and an entrance to another page.

Navigation within the 3-D space is important, particularly as your site grows. Every page should have a link back to the main or home page. It may not seem impor-

tant to link all your pages

when there are a half-dozen; but when that number grows to 50, as it surely will, you'll want a coherent, nonlinear way to browse this information. Create a hyperlinked table of contents or visual map of your pages, because people will browse it in different ways. It's also wise to include your E-mail address so people can contact

server with a 24-hour connection to the Internet to host your pages. Servers are expensive—you'd have to pay several thousand dollars to establish and run a 24-hour server over a year—so nearly all personal pages live on space begged, borrowed, or rented

from existing servers. If you are going to rent, it's probably cheapest and easiest to go with your Internet service provider (ISP). Most ISPs run a Web server that you can use; this hosting service can be part of your basic service, or you may have to pay a nomi-

nal fee. Even the commercial online services such as America Online and CompuServe offer space for publishing personal Web pages.

This comes with a caveat: Not all ISPs are created equal (see "Choosing an Internet Provider" in *Consumer Advocate*, elsewhere in this issue). You should be able to get detailed instructions from your ISP on how to post your Web pages to its server. You should also have a tech-support contact who can walk you through the process of posting your pages or who can point you to resources for personal publishers. More ambitious publishers might want to ask about ways to add interactivity, such as CGI scripts and forms for gathering information. The most common way of posting your pages to the site uses an FTP client (like Fetch, Jim Matthews's FTP shareware). You'll get a home-page URL (usually something like <http://www.host.com/~yourname/>).

Personal pages rarely require more than a few megabytes of storage space on the server. If your content really calls for multimedia treatment or you write like Tolstoy, you'll need more, and you'll probably have to pay a monthly storage fee (less than \$5 per megabyte, per month) on top of the basic fee.

That's it. Follow these steps and you'll be a publisher and a homesteader on the virtual frontier. Update your pages regularly and link them to the people and places you like on the Web. In the final years of the twentieth century, our best shot for keeping independent and alternative voices alive in our increasingly milquetoasty mainstream media just might be the Internet, and especially the World Wide Web. Whitman, maybe the most democratic of poets, would have loved the Web's

Web Worthy

Justin Hall is the poster boy for personal Web publishing. His autobiographic Links from the Underground (<http://www.links.net>) is a classic mix of the digital introspection and extroversion that makes the Web a place with people in it, not just a virtual shopping mall. Pay special attention to his Publish Yo' Self page, <http://www.links.net/webpub/>.

For the nuts and bolts of page creation, start at Macworld Online's NetSmart section, <http://www.macworld.com/cgi-bin/netsmart.pl>. We've included a basic HTML lesson, tips for beginners just learning about Web publishing, and lots of links and Web resources.

As you get more experienced and want a one-stop site where you can find tools, tricks, and tips for Web-site construction, visit Bob Allison's Web Masters page, <http://miso.wwa.com/~boba/masters1.html>. It's a great collection of links to the latest HTML tools, CGI resources, and Web-server information.

egalitarian potential. When you are building your page, take a minute to visit his home page on the Web, <http://www.columbia.edu/acis/bartleby/whitman/>. **m**

MATTHEW HAWN's home page can be found at <http://www.well.com/~jukevox>.

Shareware PICKS

PageSpinner 1.1, by Jerry Åman of Optima System, is an HTML editor for creating Web pages. It is not a WYSIWYG application, so you will be working directly with HTML to build your pages.



But features like the HTML Assistant and good floating tool palettes save you from having to type out each tag or figure out certain formulas, such as the height and width dimensions of your images. PageSpinner supports all of the standard HTML tags (including text wrapping and tables) and many of the Netscape extensions to HTML (but not frames).

One of my favorite features is PageSpinner's use of colors and icons to distinguish HTML tags from text, and standard tags from non-standard extensions. The interface supports drag and drop, uses the Mac's Color Picker for background and link colors, and contains examples and templates accessible within the application. My only complaint is the lack of keyboard commands for most of the formatting tools.

PageSpinner is \$25 shareware (register via the Kagi shareware registry—<http://www.kagi.com>). You can find it in the Mentioned in Macworld section of our Web site.

GifBuilder 0.3.1, by Yves Piguet. GIF has long been the image format of choice for most Web pages, but on the go-go-go byways of the Net, you have to keep moving or get run down. Flashy multimedia is now all the rage, and so the tried-and-true but static GIF format was headed toward roadkill status until



someone remembered that, with a little tinkering, GIF also supports multiple frames and thus animation. Netscape gave this GIF flavor (called GIF89a) a boost by supporting it in version 2.0 of Navigator. It doesn't require a plug-in, and thanks to some clever caching, it doesn't require multiple downloads the way a server-push animation does; it reloads from memory for looping effects.

Until the browser plug-in wars settle down a bit and we can see which animation plug-ins are worth downloading, I recommend the GIF89a format for adding animation to your Web pages. GifBuilder 0.3.1 is freeware, AppleScriptable, and lets you turn a series of static GIFs into an animation. Another reason we like the GIF89a format: when your browser doesn't support it, you see just the first or last frame of the animation, not a broken Web page or missing plug-in dialog.

You can get more information on GifBuilder and other GIF89a tools at Yves Piguet's Web page, <http://iawww.epfl.ch/Staff/Yves.Piguet/clip2gif-home/GifBuilder.html>.

REACHING MACWORLD ONLINE

America Online: Keyword *Macworld*

World Wide Web:
<http://www.macworld.com>

Mailing list for Macworld Live's events calendar: Send an E-mail message with **subscribe** in the subject line to:
mwlive@macworld.com

Web Watch

YOUR RESOURCE TO THE WORLD WIDE WEB

Macworld



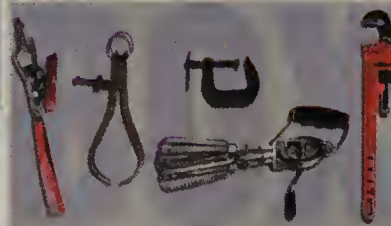
Agfa



The Agfa Web site features debates on topical issues, interviews with industry experts, news-groups, and the opportunity to win an Agfa color scanner each month. Designers, desktop publishers, and other graphics professionals will find the latest information on Agfa scanners, digital cameras, color management software, type, proofing systems, RIPs, servers, screening technologies, imagesetters, digital printing systems and more.

<http://www.agfahome.com/>

Box Top Software



Making the tools that make the web™

The most powerful tools for professional web graphics. Download demo versions of PhotoGIF and ProjPEG plug-ins for Adobe Photoshop and watch your graphics fly. Learn the secrets of GIF animation using PhotoGIF and GIFmation in our online tutorial and browse The Plug Page, your complete source for the hottest freeware and shareware plug-ins on the web.

Email: boxtop@aris.com 1-601-324-7352

<http://www.aris.com/boxtop>

DeskTop Laser and Ink Jet Printer Labels



Premium Quality

LASER / INK JET
PRINTER LABELS

Nobody, but NOBODY
beats our prices or quality.

DeskTop offers first class printer labels at the lowest prices anywhere - 30% to 40% less than advertised or even store brands.

Unsuppassed quality - reliable, durable, printer safe. Full selection - all popular sizes, styles and applications including exclusive repositionable and "see through" labels. Direct from manufacturer. Money-back guarantee.

Visa-Mastercard.

Check the web or call 800-241-9730.

<http://desktop.meyers.com>

Image Club Graphics



Visit Image Club's site for all your graphic design needs and more. You'll find their fresh collection of fonts, clip art and stock photos are versatile, well designed and lots of fun to use. With an easy to follow tips & tricks section and a constant supply of new exclusive and brand name products, you'll have access to all the tools you need to create innovative design.

<http://www.imageclub.com/>

Impossible Software



The Ultimate Font Tool for Macintosh

MW ★★★★★

Home Features FAQs Demo Info News



Learn about the latest in Macintosh font management tools, tips and techniques by exploring the features of TypeTamer™ on Impossible Software's Web Pages. You will find answers to many font related FAQs, be able to download a trial version of TypeTamer™ and communicate with Impossible Software's Support Staff. See you on the web! 1-800-470-4801.

<http://www.impossible.com/>

Macworld Online



- A year's worth of Macworld in searchable format;
- Lively message boards full of tips, advice, and commentary from editors, authors and readers;
- A first-rate software library stocked with the best in Macintosh-related software and freeware;
- NetSmart, a glossary and compendium of Web-related tutorials, hints, and links;
- TechnoCultural Cafe, a nexus for the more creative side of digital living.

<http://www.macworld.com>

NetJet



Exciting, compelling and breathtaking are just some of the words people use to rave about our clients' web sites.

NetJet Communications builds web sites for today's innovative companies. We use the latest technologies, such as commerce servers and Hot Java, to help our clients conduct business on the Internet in the Net Age.

For more information, visit our Web site or call us at (415) 626-4800.

<http://www.netjet.com/>

The Software Source



STUDENT, TEACHER, & SCHOOL
DISCOUNTS ON
SOFTWARE & HARDWARE

The Software Source Co., Inc. is a leading retailer of software and hardware on the Web. We offer discounts to students, teachers and schools on products by all major manufacturers. The discounts range from 30% - 80% off retail prices. Visit our site today and receive our free catalogue or to browse our complete product listing. You can even order online! 1-800-289-3275.

<http://iaswww.com/source.html>

Nobody Out-Trons SonicTron. Not even Trinitron.



Today, the market is full of Trinitron®-like technologies. And while most companies are satisfied with simply cloning it, ViewSonic® has improved it.

SonicTron™, ViewSonic's newest color screen technology gives even the most demanding Macintosh® owners, desktop publishers and graphics users vivid, saturated colors and high contrast images so intense they're staring in wide-eyed amazement.

The experts agree.

SonicTron has been getting some pretty impressive reviews. Says Jerry Pournelle in *Byte* magazine, "The User's Choice Award for this year goes to the ViewSonic Professional Series PT810."

MacUser gave it a 4-mice rating and added, "It boasts image quality so good even demanding graphics artists and desktop publishers will be pleased."

Computer Reseller News gave the SonicTron PT770 their Editor's Choice award in April, 1996.

The price is right.

Both ViewSonic's PT810 and PT770 SonicTron monitors deliver astonishing clarity—and pricing the other Trons can't get close to.

Ranging from 17" to 21" (15.9" to 20.0" viewable), SonicTron has an aperture grille mask for sharp focus and brilliant color, OnView® controls for easy screen adjustments and Colorific™ software to insure that printer and monitor color profiles match perfectly.

A limited 3 year warranty on CRT, parts and labor, and an optional Express Exchange™ Service program that insures 48 hour replacements are also part of the deal. If you'd like to see the Tron that all the others look up to, call your reseller.

Or, for more information, call (800) 888-8583 ask for agent 5846.

Model	ViewSonic PT810	Sony 20sfl	ViewSonic PT770	Sony 17sfl
Aperture Grille Pitch	0.30mm	0.30mm	0.25mm	0.25mm
CRT Size	21"	20"	17"	17"
Viewable	20.0"	19.1"	16.0"	16.0"
Horizontal Scan Rate	30-96 KHz	30-85 KHz	24-82 KHz	30-65 KHz
Maximum MAC® Resolution	1600x1200	1280x1024	1280x1024	1024x768
Color Control	Yes	Yes	Yes	No
CRT Warranty	3 Years	2 Years	3 Years	2 Years
MSRP*	\$1,995	\$2,299	\$945	\$1,099

* MSRP as of May 1, 1996. Prices and specifications subject to change without notice.

ClubMac®

800-258-2622
Source Code: VWS596



800-339-4239



800-560-6800
2FT3651

PC Connection

800-986-2271



800-248-0800

MacWAREHOUSE

800-255-6227



ViewSonic®

Media

Server-Friendly Image Maps

TAKE A LOAD OFF YOUR WEB SERVER WITH CLIENT-SIDE MAPS

by Jim Heid

You can't be all things to all people, yet Web-site developers are asked to be exactly that every day: Take advantage of all the Netscape extensions to HTML, but also make sure your site works in other browsers. Include graphics on your site, but don't leave out people with text-only browsers. Use Shockwave animations, but don't ignore surfers who don't have the plug-in. Pressures like these are enough to make you empathize with a politician. Almost.

It's a rare moment in Web publishing when you can combine forward-looking design with backward compatibility. *Client-side* image maps allow for this happy combination.

Last month, I covered conventional, or *server-side*, image maps—those graphics on which Web-site visitors can click to navigate your site. Server-side maps impose a performance penalty on the server because they require it to translate coordinates received from a browser into the address of a specific page—even when a visitor clicks on part of a map graphic that isn't hot.

Client-side maps aren't so lazy. Instead of beaming the server a set of numbers and making it figure out where to go, the browser knows which coordinates correspond to which hot spots. Click on a hot spot, and the browser sends the server an URL. By putting the



coordinates and their links into the HTML page itself, client-side maps let servers concentrate on, well, serving.

Another benefit: you can test Web pages containing client-side maps by opening them from a local hard drive—to test a server-side map, you must actually upload pages to a Web server and install the CGI application that handles the image map.

Client-side maps even have a user-interface benefit for Web surfers: where server-side maps show a bunch of chang-

ing coordinates at the end of the URL in the browser window's status area, a client-side map shows the exact address of each hot spot as the mouse pointer moves over it—as for any link (see “Show Me Where I’m Going” in the sidebar). And there's no risk of a Web surfer's clicking on a dead spot, as there is with client-side maps: when the mouse pointer isn't over a hot spot, no link appears at the bottom of the browser window.

Here's the best part: you can support both kinds of maps in one HTML docu-

A Field Guide to Client-Side Image Map Tags

SUPPORTING A CLIENT-SIDE IMAGE

map involves adding some extra HTML tags to a Web page. Here's a field guide to the tags you'd need in order to turn last month's server-side map into a client-side map. To see them in action, check out Macworld Online (<http://www.macworld.com>).

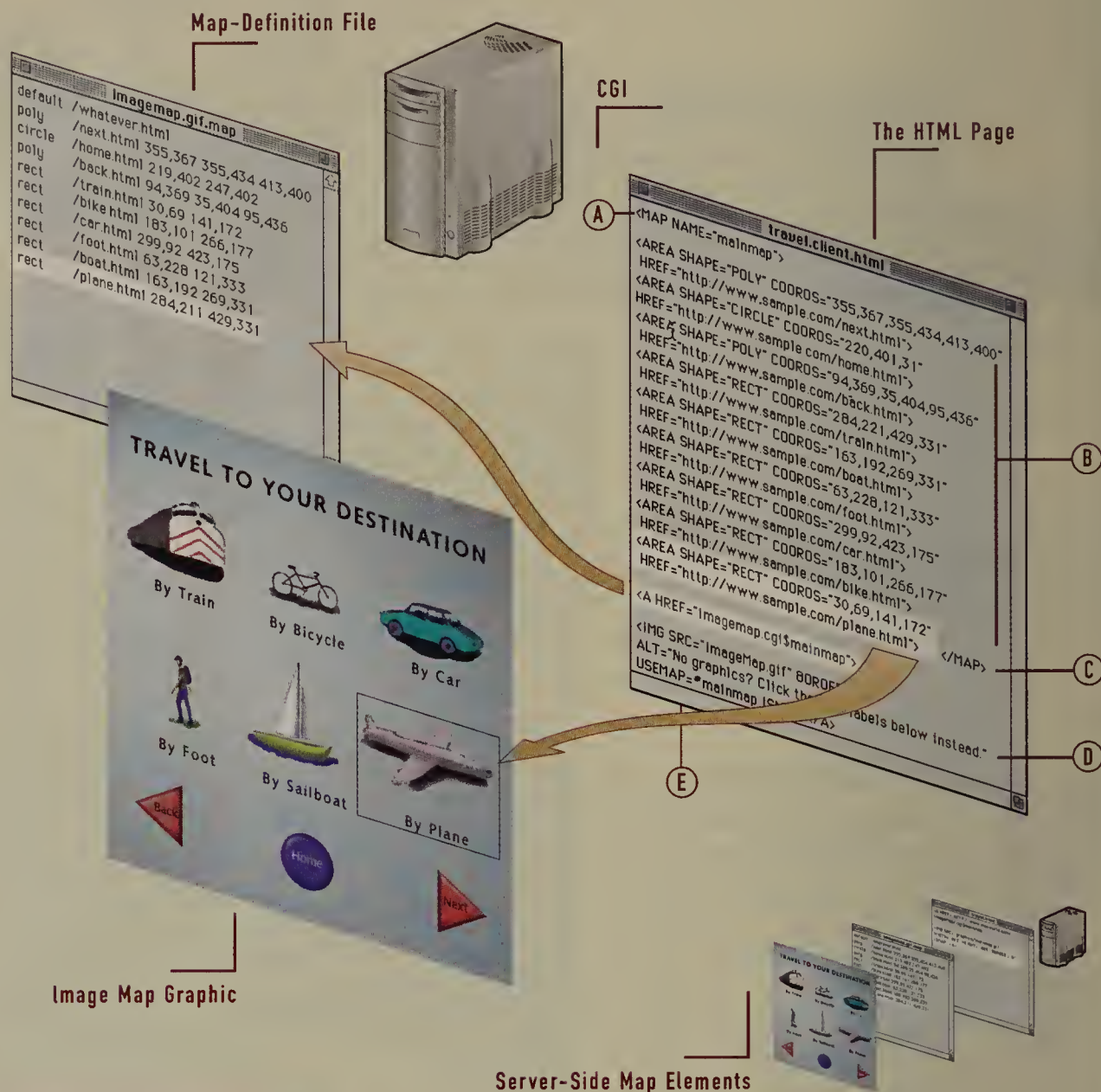
A The **MAP** tag denotes the beginning of the client-side image map's definition. The **NAME** tag that follows gives the definition a name you'll use when referring to the map in the **USEMAP** tag, described in E.

B In a client-side image map, each hot spot's coordinates and link reside directly within the HTML page, not in a separate map-definition file as they do with server-side maps. Client-side maps support three shapes: polygons (**POLYGON**, also abbreviated **POLY**), circles (**CIRCLE**), and rectangles (**RECT**). The **CIRCLE** tag's three attributes reflect the location of the circle's center point and the circle's radius (see "Notes and Tips").

C After defining each hot spot, end the definition with the **</MAP>** tag.

D The rest of the HTML code looks much like its server-side counterpart, with good reason: this code also supports a server-side map for use with browsers that don't support client-side maps. An anchor element contains an **HREF** tag that points to the server-side CGI and to the map's graphic, and an **ISMAP** tag that tells the browser to treat the graphic as an image map.

E But the code also contains a **USEMAP** tag, which tells a client-side-aware browser to use the map definition whose name appears after the pound sign (#). See "Notes and Tips" for a variation on this theme.



NOTES AND TIPS

Eliminate the SHAPE tag

The **SHAPE** tag is optional; if you eliminate it, the browser assumes that the shape is a rectangle (**RECT**).

Run circles around PageMill

I mentioned elsewhere that you can copy the coordinates for a client-side map from a server-side map-definition file. However, if you use Adobe PageMill to create the map-definition file, you'll encounter a problem relating to circles: a PageMill-generated map-definition file describes circles as ovals, using four values that define the upper-left and lower-right coordinates of the circle's bounding box. The **CIRCLE** tag, however, requires just three values, two to define the center of the circle in relation to the upper left corner, and one to define the radius of the circle. Thus, PageMill-generated coordinates won't work for circles in client-side maps.

The solution? You can either use Adobe Photoshop's Info palette to extract the circle's coordinates laboriously, or use WebMap, by Rowland Smith (\$20 shareware, <http://www.city.net/cnx/software/>). WebMap provides separate tools for circles and ovals, and the map-definition files it generates describe circular hot spots correctly.

Store hot-spot definitions in a separate document

In this example—and in the vast majority of client-side maps on the Web—the hot-spot definitions are stored within the same HTML page that displays the map graphic itself. But you can also store the definitions in a separate file; it is a good idea to do so if you use the same image map in a number of pages. If you store the definitions in a separate file, change

the **USEMAP** tag to include the file's name (for example, **USEMAP="maps.html#mainmap"**).

Include alternate text

Since some users have text-only browsers, and others disable font downloading, it's always a good idea to include an **ALT** tag with accompanying text labels. This tag instructs visitors to use the labels (not shown here) for navigation.

Use POLYGON instead of POLY

Netscape Navigator and Microsoft Internet Explorer recognize the **POLY** tag as an abbreviation for **POLYGON**. However, Spyglass Mosaic doesn't recognize **POLY** and ignores any hot spots defined with it. Thus, for complete compatibility with browsers that support client-side maps, use the **POLYGON** tag.

ment. Browsers that support client-side maps—Netscape Navigator 2.0, Microsoft Internet Explorer, and Spyglass Mosaic—use them, while other browsers use the server-side map. Thus, there is no excuse not to include support for client-side maps on a Web site. As always, you can find examples and links to additional information on my Web site, <http://www.heidsite.com>.

On Your Client's Side

The secret to client-side maps is to add some extra HTML tags to the page that contains the image map (see “A Field Guide to Client-Side Image Map Tags”). One set of tags defines the coordinates of each hot spot as well as the hot spot's destination. These tags do the job performed by a map-definition file in server-side maps. The key player in this set of tags is **MAP**, which tells the browser that a collection of coordinates and links is on the way.

The other new tag is **USEMAP**, and it goes within the **IMG** tag that references the image map's graphic. Now here's the cool part: to support both client- and server-side maps, you simply use both the **USEMAP** tag and the **ISMAP** tag (the latter is used with server-side maps). A browser that supports client-side maps will use the **USEMAP** tag, while the others will use the **ISMAP** tag.

So how do you create the client-side tags? Two free, AppleScript-based programs convert server-side map-definition files into client-side tags: Jeff Barnum's MapConvert and Andreas Heissenberger's ClientMap Converter. The University of Iowa's Arachnid, a freeware HTML page-creation program, supports both server- and client-side maps. (You can download all three programs from America Online as well as my Web site.) Adobe's PageMill and SiteMill don't support client-side maps, but Astrobyte's (303/534-6344, <http://www.astrobyte.com>) \$595 BeyondPress, an impressive package that turns QuarkXPress into a Web-page editor, supports both types of maps.

If you don't use BeyondPress, you have to add the tags to your pages by hand, using a text editor. But if you're also supporting server-side image maps (and you should be), there are plenty of tools available for creating map-definition files. These utilities range from the shareware WebMap (\$20, by Rowland Smith; <http://www.city.net/cnx/software/>

[webmap.html](#)) to commercial packages such as Adobe's PageMill and SiteMill (<http://www.adobe.com>). Once you've got a map-definition file, you can at least extract each hot spot's coordinates—the format is the same for both types of image map.

Other Graphic Navigation Strategies

Client-side maps provide a better user-interface experience than server-side maps, but they still don't fully address the visual-feedback issue. In a CD-ROM title, buttons highlight or otherwise change when a user clicks on them. An image map can't do that. Technologies such as Macromedia's Shockwave for Director and Sun Microsystems' Java allow for multiple-state buttons but induce their own headaches: limited browser support, a high memory overhead, and a steep learning curve.

One simple technique provides at least some visual feedback in the Mac versions of Netscape Navigator and Microsoft Internet Explorer: forgo image maps in favor of multiple separate graph-

ics with borders. The aforementioned browsers alter the border's color when the graphic is clicked on (see “Can I Get Some Feedback on That?”).

You can combine this strategy with HTML 3.0 tables to position graphics alongside one another. But don't go overboard. Navigator and Explorer can open several connections to a server to retrieve multiple graphics more or less simultaneously. This can bog down the server and therefore slow your site.

If you've got more than about five graphics, it's best to use an image map—one that works from both the client side and the server side. There aren't many areas in Web development where you can support two dramatically different approaches in a single page. This is one—take advantage of it. **m**

Next month: Web-site animation

Contributing editor JIM HEID produced the interactive CD-ROM that accompanies his *Macworld New Complete Mac Handbook*, fourth edition (IDG Books Worldwide, 1995).

CAN I GET SOME FEEDBACK ON THAT?

On a CD-ROM, buttons and other hot spots change state—they highlight, for example—when you click on them. A Web-site image map can't provide this feedback. But by using client-side image maps or separate graphics, you can provide at least a measure of feedback.



Show Me Where I'm Going A client-side image map (left) enables a browser to indicate where a given hot spot will lead visitors. This also enables visitors to discern the hot spots—no link appears at the bottom of the browser window when the mouse pointer isn't over a hot spot. With a server-side map (right), all Web visitors see is a set of numeric coordinates, which appear even when the pointer isn't within a hot spot.



Flash When I Click on You Mac browsers highlight a hyperlinked graphic's border when you click on the graphic. (Oddly, the Windows versions of these browsers don't highlight the border.) You can take advantage of that fact to provide a bit of visual feedback. Instead of creating a single bitmap for an image map, keep graphics separate and don't use the **BORDER=0** attribute in your HTML page. The browser creates a border by drawing a box around the graphic, so this technique generally works best with square or rectangular buttons. In this example, clicking on the button image changes the border color from blue to green.

Publishing Workshop

Brush Up on Indents, Start Using Them Now

by David Blatner

Not long ago, I got a call for help from a designer friend who was working on a brochure containing a long list of bulleted items. Some items

were short—just one line long. Others, however, spanned several lines. “I don’t mind incorporating the client’s changes to the one-liners,” she told me, “but the longer items take forever to alter.” It took me a few minutes before I understood her problem: she had no idea how indents work.

What’s worse, I’ve discovered that this problem is epidemic in the desktop publishing industry. With just two minutes of instruction, she was able to double her productivity on this job. If you’re in her boat, it shouldn’t take you much longer than that to read this article and reap the same benefits. (For more information, check out *Beyond the Mac Is Not a Typewriter*, by Robin Williams; \$16.95; Peachpit Press, 1996; 510/548-4393).

Left, Right, and First

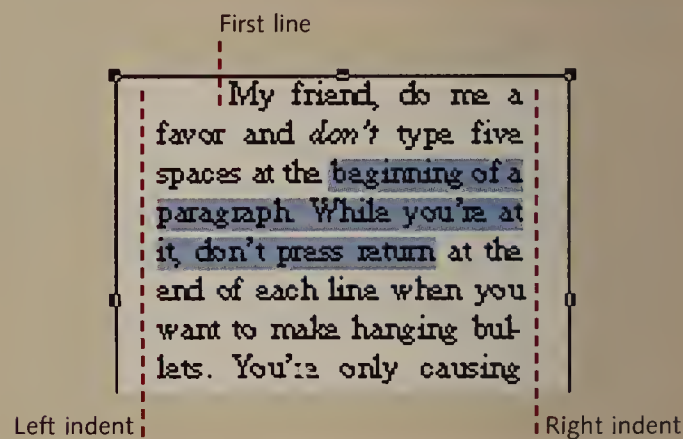
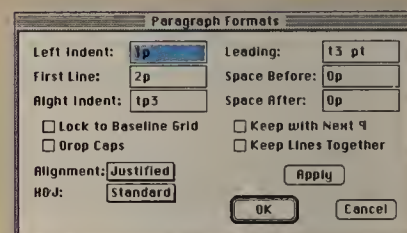
Almost every program on the Mac that lets you handle a paragraph of text gives you three indent controls: left, right, and first line. These controls always affect an entire paragraph.

The text always wraps between the left and right indents, so these can appear to be margins. However, the left and right indents are *not* the same as page margins. If you want to change a margin at the top, left, right, or bottom of your page, you should do so elsewhere in the program.

An indent of zero doesn’t mean the text will print at the edge of the paper. In word processing programs, a zero indent means the text starts at the left margin and wraps at the right margin. In page-layout programs (like QuarkXPress and Adobe PageMaker), a zero indent means the text wraps from the left side of the text box all the way to the right side.

You can change the indents for a paragraph by typing numbers in the paragraph formatting dialog box (in

ALMOST EVERY PROGRAM that handles text lets you specify a left, right, and first-line indent for each paragraph. QuarkXPress’s dialog box is typical.



XPress, you can bring up the dialog box with ⌘-shift-F; in PageMaker and Microsoft Word, you use ⌘-M) or by dragging the indent triangles in the text rulers. QuarkXPress shows you the text ruler only when the Paragraph Formats or Paragraph Tabs (⌘-shift-T) dialog box is visible; in PageMaker you have to

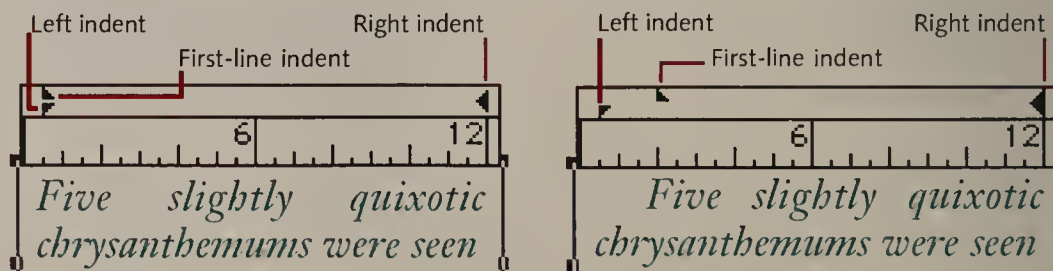
have the Indents/Tabs dialog box open (⌘-I). In Word, you can display the text ruler at any time (⌘-R).

Splitting Hairs

While the left and right indents control the entire paragraph, a first-line indent affects only the left side of the paragraph’s first line. If you’re

Hands-on Indents

While you can always specify paragraph indents numerically in a dialog box, some people like the touchy-feely approach to setting indents. Drag the tiny triangles to get the look you want.



One-Step Hanging Indents

still in the habit of typing a tab at the beginning of each paragraph, *stop it*. Instead, give the paragraph a first-line indent.

You can apply a first-line indent either numerically in the dialog box, or manually in the text ruler by dragging the top half of the left-indent triangle (at least, this is how it works in most programs). Typically, when you drag the lower triangle (which determines the left indent of the paragraph), the first-line indent triangle moves, too, because the first-line indent is always *in relation* to the left indent. You can move the left-indent triangle independently in PageMaker and Microsoft Word by holding down the shift key as you drag. Unfortunately, in QuarkXPress, you can't move the left-indent triangle by itself—the first-line indent triangle always moves along with it.

Hanging Indents

The coolest thing about a first-line indent is that it doesn't have to indent *into* the paragraph (to the right)—you can also indent out of the paragraph (to the left). This makes it very easy to create bulleted or numbered lists, and other typographic designs that require hanging indents.

Remember that the first-line indent can't push the paragraph past the left edge of the text block. If you have a left indent of 0.25 inch, you can have a negative first-line indent (up to -0.25 inch where the first line would be at zero), but not -0.3 inch, and so on. But if you specify a left indent of zero you can't have a negative first-line indent at all.

Other Techniques

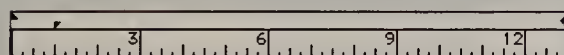
There's more than one way to skin an avocado. For instance, if you want a hanging bullet in QuarkXPress, you could type this at the beginning of the paragraph: bullet, tab, and the

THERE ARE SEVERAL WAYS YOU MIGHT USE hanging indents—for bulleted or numbered lists, for bits of dialogue, any time you want the first line (or first element) of a paragraph to extend beyond the left edge of the paragraph. It's tempting to achieve the effect by typing a return at the end of each line and extra spaces at the beginning of the next. But there's a better way: give the paragraph a positive left indent and a negative first-line indent.

For example, to create a list with hanging bullets, you might give the paragraph a left indent of 0.25 inch (1.5 picas), and a first-line indent of -0.25 inch (the exact numbers you use depend on the size of your bullets and the space you want after them). Then you type a bullet followed by a tab at the beginning of the paragraph. Note that in PageMaker you must explicitly specify a tab stop at the 0.25-inch mark. QuarkXPress and Microsoft Word let you skip this step because the tab automatically jumps to either the first tab stop or the left-indent marker (whichever comes first).

A standard numbered list.

Left Indent:	1p
First Line:	-1p
Right Indent:	0p



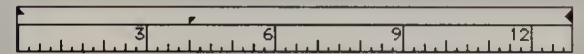
1. Place the cursor in the paragraph you'd like to affect.
2. Open the Paragraph Formats dialog box in whatever program you're using.
3. Type in a positive left indent and a negative first-line indent.
4. Press OK.

Indent Here command (⌘-\\). But the negative-first-line indenting technique works better because you can save it in a style sheet and thereby apply it quickly to many paragraphs (it's also more flexible if you choose to change your design later).

Ninety-nine percent of the time, you should use the simplest method available for whatever you're trying to create. That means using simple but powerful tools—like indents—rather than complicated ones—like typing five spaces at the beginning of

A negative first-line indent; a tab follows each character's name.

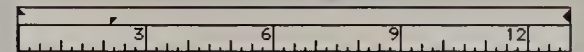
Left Indent:	4p
First Line:	-4p
Right Indent:	0p







Banquo How goes the night, boy?
Fleance The moon is down; I have not heard
 the clock.
Banquo And she goes down at twelve.
Fleance I take't, 'tis later, sir.

A negative first-line indent; the first character is an in-line graphic, followed by a tab.

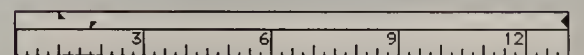
Left Indent:	2p2
First Line:	-2p2
Right Indent:	0p



 Vincent's Vanishing Cream does some amazing things to your complexion.
 Smiling Sarah's sun-dried apricots are filled with the natural goodness of a summer day.
 The eyebrows have it—improve your range of facial expressions with Edward's Eyebrow Exerciser.
 You are getting drowsy. Hanks Hypno Helper promotes sleep without pills!

Slightly indented hanging bullets.

Left Indent:	1p9
First Line:	-p9
Right Indent:	0p



- *Macbeth*, by William Shakespeare
- *God in Search of Man*, by Abraham Joshua Heschel
- *When Bad Things Happen to Good People*, by Harold S. Kushner
- *Gödel, Escher, Bach: An Eternal Golden Braid*, by Douglas R. Hofstadter

each paragraph. If you're still using typewriter techniques, you're just not being efficient. **m**

DAVID BLATNER, who wrote the tips in the Tip of the Day XTension in Extensis's QX-Tools package, can be reached by E-mail at david@moo.com.

Graphics Workshop

Designing an Image for Use on the Web

by Cathy Abes

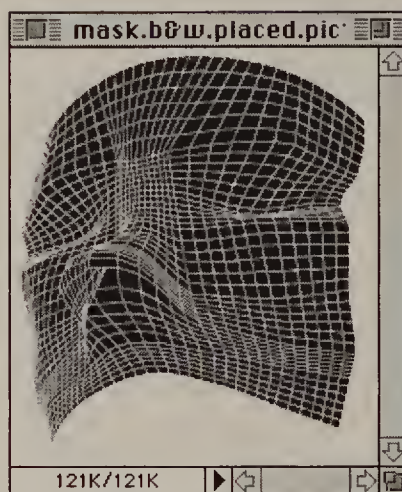
ARTIST Matthew Peacock, through his Philadelphia-area digital design studio, [anonymous] productions (<http://www.anonymous1.com>), creates 2-D and 3-D imagery for print, interactive multimedia, and World Wide Web sites.

HOW IT WAS DONE Peacock designed this image for the home page of Odyssey Systems, a commercial Web-site provider. He began with a 72-dpi image in 24-bit mode, which gave him flexibility in manipulating color; for example, he could apply Photoshop filters (not possible in 8-bit). He later converted it to 8 bits for optimal on-screen performance. Using DeBabelizer to create a custom 8-bit palette minimized color loss, so the final image looked very close to the original. Peacock saved the final image in Interlaced GIF 89a format, which, unlike previous GIF versions, let him create a transparent background for the images.

He created both a custom palette and a Windows-optimized palette to compare color quality (see "Optimizing Web and CD-ROM Graphics," *Media*, May 1996). Although the custom palette looked slightly better on his Mac, he chose the other because he expected mostly Windows users to view the Web site.

To ensure that the final image would load quickly (in less than 10 seconds using a 14,400-bps modem), Peacock kept it under 40K and no wider than 470 pixels.

THE TOOLS Hardware: Power Mac 7100/66; 32MB of RAM; 500MB internal hard drive; external Iomega Zip drive; Sony Multiscan 15sf 15-inch monitor. Software: Adobe Illustrator 5.5; Photoshop 3.05; Equilibrium DeBabelizer 1.5.5; Specular Infini-D 3.01; Amapi 2.05. **m**

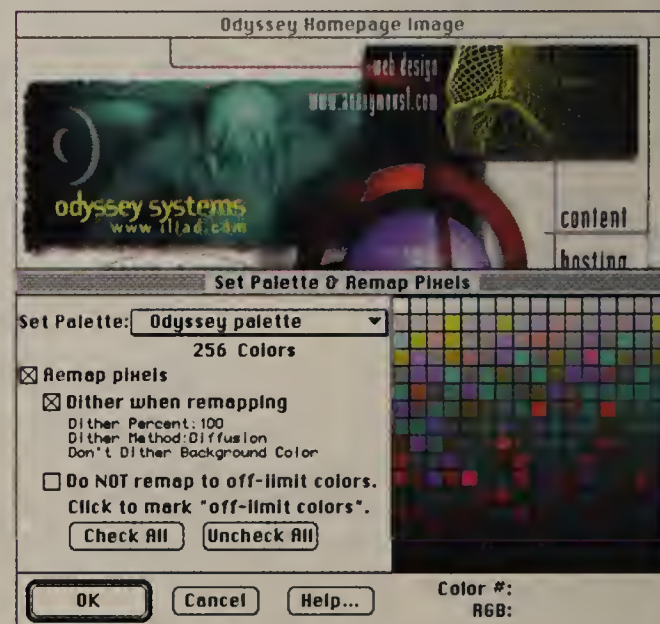


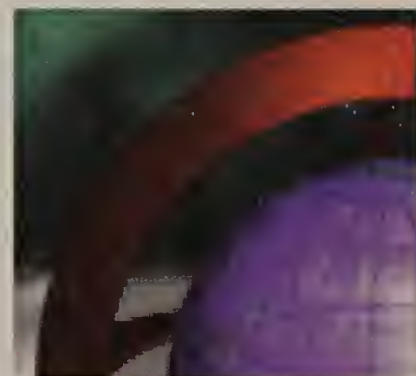
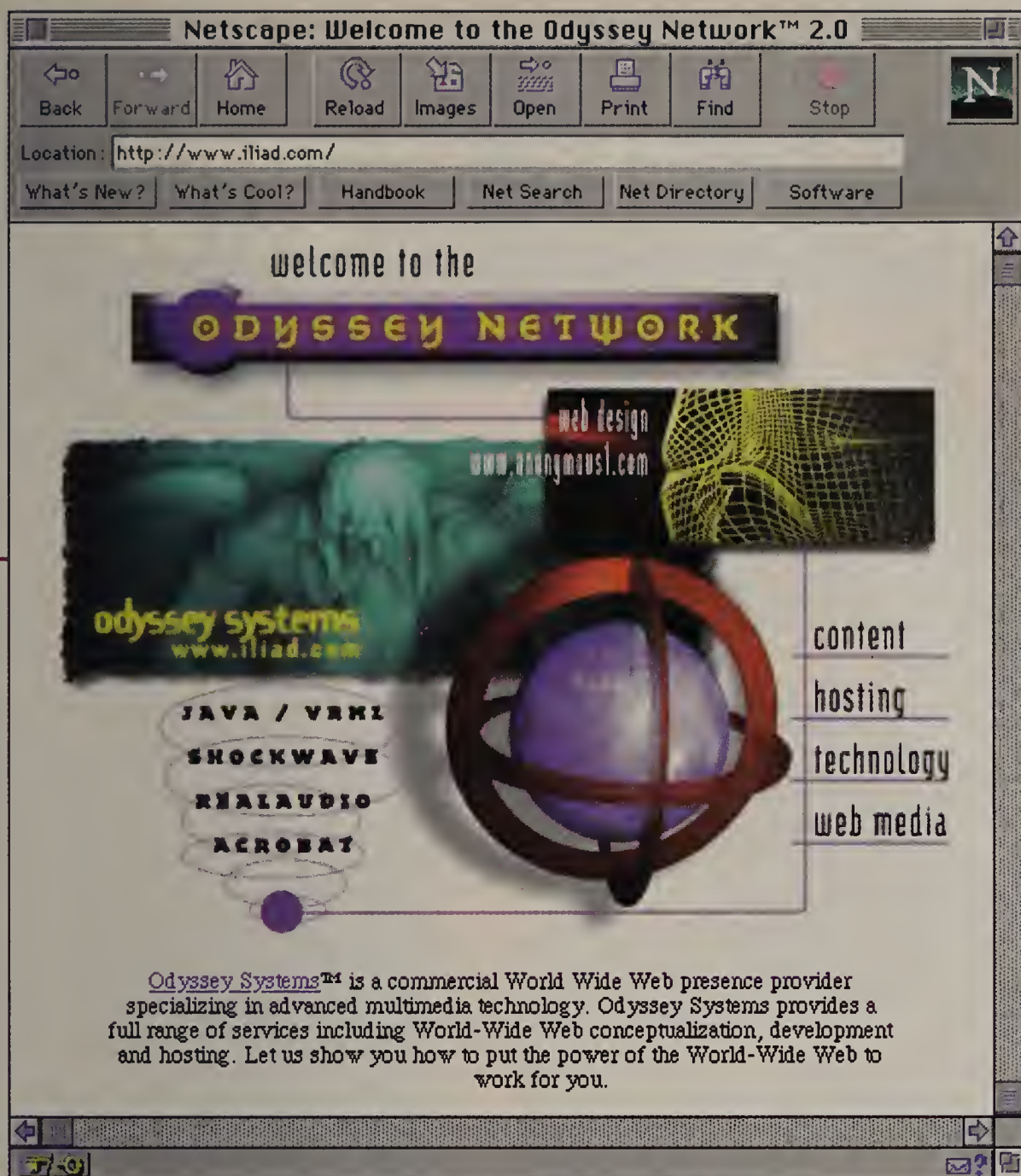
1 To give the Web page the appearance of three dimensions, Peacock created a black-and-white wire-frame mask in Amapi, a 3-D-modeling package by Yonowat, and rasterized it in Photoshop.



2 To keep the file size down, Peacock colored the mask in Photoshop using only three colors.

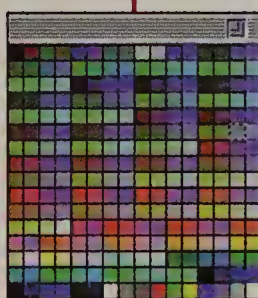
3 Converting the image to 8 bits in DeBabelizer enabled Peacock to further reduce the file size. DeBabelizer also gave him far more control over remapping pixels than Photoshop, so he was able to maintain image quality close to that of the original.



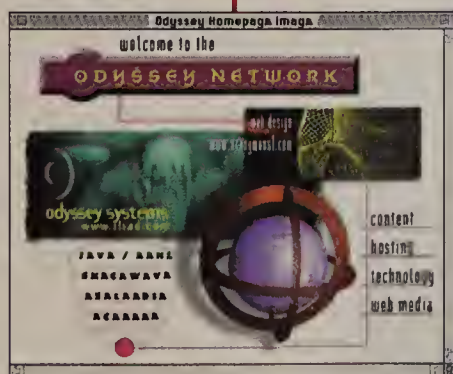


6 Because the globe (created in Infini-D) and the Zeus image both contained many subtle color shifts and lighting effects, they were much smoother-looking in JPEG (top) than in GIF.

In GIF format (bottom), the image looks mottled because GIF reduces the color palette much more drastically than does JPEG and interprets subtle color variations crudely—a tradeoff the client chose to make for browser compatibility.



4 Here's how the image looked after Peacock reduced it to 8 bits using the custom color palette he created in DeBabelizer.



5 Here's the image after DeBabelizer converted it to 8 bits using the standard 256-color Windows palette.

SHOCKING YOUR WORLD



1996 Macromedia International User Conference & Exhibition

September 4-6 • Moscone Center • San Francisco

Circle 244 on reader service card

Attend the 1996 Macromedia International User Conference & Exhibition and you'll experience some shocking revelations. Its mind-altering sessions, expert technical labs, and hands-on training will positively electrify how you use top Macromedia products like Shockwave™, FreeHand™, Director®, Authorware®, Extreme 3D™, SoundEdit 16™ plus DECK II™, Macromedia xRes™, Backstage™, and Fontographer®.

Listen in as Mark Andreessen, Steve Case, Bud Colligan, John Doerr, Andy Grove, Guy Kawasaki, John Ludwig, Norm Meyrowitz, Eric Schmidt, and others outline the future of Web interactivity and multimedia design. Get powered up with six killer conference tracks covering the Web, multimedia, corporate solutions, graphic design, Macromedia tools, advanced seminars, and hands-on training. Finally, plug into the Macromedia Gallery, late-night hacker sessions, the product and technology exhibition, and collaborative gatherings with the world's top developers, designers, and creators.

Save \$100—sign up by 7/1/96!

Register/Enter the Macromedia Gallery/Get more information at (800) 287-7141, (203) 840-5660 or <http://www.macromedia.com/>

Diamond Sponsors:



INTERGRAPH
COMPUTER SYSTEMS

SONY

Platinum Sponsors:

Kingston
TECHNOLOGY CORPORATION

Linotype-Hell NE

NEWMEDIA

PROXIMA® Publish

Gallery Sponsors:



Multimedia Producer

MACROMEDIA®

© 1996 Macromedia, Inc. All rights reserved. Macromedia, Authorware, Director and Fontographer are registered trademarks and Backstage, Extreme 3D, FreeHand, Lingo, Shockwave, SoundEdit 16, Macromedia xRes are trademarks of Macromedia, Inc. All other brand or product names are property of their respective owners.

Buyers' Tools

Tape-Backup Systems

A NEWCOMER TAKES TOP HONORS IN MACWORLD LAB TESTS

by Dan Littman

Several years ago your hard drive crashed so hard it gouged a hole in your desk. That one catastrophe was enough for you—since then you've always stashed away an extra copy of your data. But back then your hard drive held only 80MB, and its contents fit easily on one backup tape. Nowadays your Mac is probably equipped with a 2GB hard drive. The inconvenience of backing up escalates as your collected data expands.

What to do? While there are plenty of removable-media types that make good backup systems, tape has stayed ahead of the pack both in cost per megabyte and in total capacity, while reaching speeds that make it viable for backing up even the biggest drives. Unlike most other removables, though, a tape drive is too slow to double as a regular storage device—it's good only for backup and archiving.

Just as removable-platter and floppy formats have proliferated, so have tape formats. We looked at four basic types of tape drives: all do essentially the same thing, but some are better suited for single users and others for network use, and some are more appropriate for the enormous file sizes of digital video and prepress and others for the more typical business scenario of many small files. To help you pick the right kind of tape system for your needs, Macworld Lab tested and compared 17 tape drives, using seven different mechanisms, chosen from the four tape formats we consider most viable—Travan, DAT, 8mm, and DLT.



KEVIN CANDLAND

The Four Formats

- Quarter-inch cartridge drives, commonly called QIC or “quick,” were oblivion-bound until Conner (now Seagate [<http://www.seagate.com>]) developed the new Travan QIC format, which holds 2GB of uncompressed data on a tape. (Note that compressing your data can squeeze up to twice as much onto any tape format. Different kinds of data compress by different amounts; raw text tends to be the most compressible, and complex graphics the least.)

We tested two Travan systems, one marketed under the Seagate label and one from MegaHaus (<http://www.megahaus.com>). Both make irritating, unnerving noises. A specially designed

case might reduce noise, but for this format—which, compared with DAT, holds half the capacity, runs at half the speed, and costs between a half and a third as much—it's unlikely any vendor would make the investment.

- DAT (digital audiotape) uses a 4mm cartridge; depending on tape length, DATs range in capacity from 1GB to 4GB, uncompressed. DAT is convenient, inexpensive, and equally effective on the network or on your desk. The first thing to like about DAT is how quiet it is—just a slight whoosh and an occasional click.

But the DAT implementations we looked at have some pitfalls to watch out for. The Microtech (<http://www.microtechint.com>) Blue Stream, for exam-

ple, uses a nonstandard SCSI cable; its case covers up some of the status lights; and its SCSI-number switch is not protected, so you could accidentally change its ID while groping in the back for the on/off switch. The DynaTek (<http://www.dynatek.co.uk>) DAT drive's tape-eject button provides no tactile response—DATs take a moment to eject, and until the tape comes out you can't tell if pressing the button did the trick. Finally, the Hewlett-Packard (<http://www.hp.com>) unit didn't even include Mac software, a substantial extra cost—a copy of Dantz Development's (510/253-3000, <http://www.dantz.com>) Retrospect, which is the Mac tape-drive standard and is included in 15 of the 16 other systems we tested, will run you \$125 to \$150; the MegaHaus DAT comes with Novastor's Novaback, which we didn't test.

• We looked at two versions of Exabyte's (<http://www.exabyte.com>) 8mm system, one internal and one external. The system holds up to 7GB of uncompressed data and is very quiet. The external device looks like a sophisticated answering machine or portable cassette player, with a door on top that pops open for the tape. Exabyte announced its Mammoth drive last August to compete with DLT-type drives, with twice the speed at the same price and capacity. However, the Mammoth didn't ship until spring this year, after the test deadline for this story. Watch for a review of the Mammoth, which reportedly can accommodate 8mm tapes.

• DLT (digital linear tape) is the new kid on the block. Its ½-inch cartridges can hold up to 20GB of uncompressed data. DLT is most efficient with data that

doesn't require a lot of stopping and starting—huge graphics files, or streaming data formats such as digital video. It runs so fast that even a lightly trafficked 100BaseT network can't keep it busy; in fact, feeding data too slowly was reputed to damage early DLT systems (Quantum [<http://www.quantum.com>] claims that the current generation does not have that problem).

The first thing you'll notice about DLT systems is their appearance: they're about as big as a large shoebox and somewhat intimidating to behold. Not to worry: DLT drives are DAT-quiet and as easy to use as any other tape drive. The five DLT systems we looked at are essentially identical—all Quantum mechanisms, with the same faceplate, status lights, and buttons for setting the tape density. One minor disadvantage is that, unlike the other three formats, DLT tapes are not self-contained in cartridges but are more like reel-to-reel systems, so you must rewind a tape completely before you can eject it.

What Price Performance?

After capacity, backup speed is the next important consideration. The Travan QIC is the slowest overall, maxing out at about 23MB per minute when backing up a large collection of small files in a compressed format (see the benchmark, "Tape Drives: Bigger Is Better"). That means the Travan takes about 40 minutes to back up a 1GB drive. (These times were measured with data verification turned on—you should keep verification on as a safeguard that your data is recorded properly.) Generally Exabyte comes next at about 33MB per minute, or a half-hour or so to back up a 1GB drive (although one DAT drive did rank lower). DAT backups range from about 40MB per minute for units that use Hewlett-Packard's C1533A mechanism to about 50MB per minute for units based on Sony's SDT 7000 mechanism. The Quantum DLT-based systems top 70MB per minute, or less than 15 minutes for a 1GB drive.

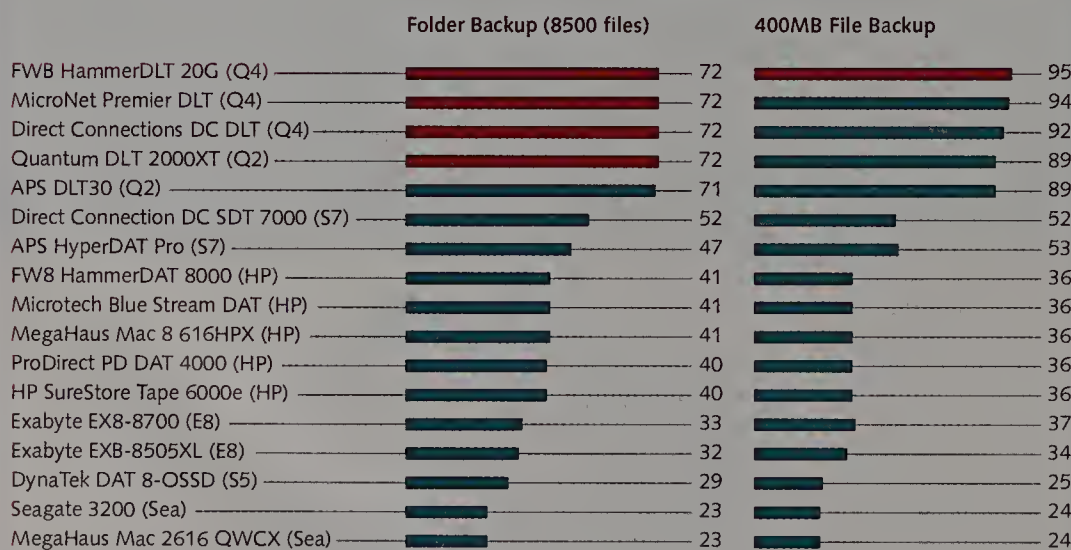
To determine which tape system is best for you, add up the capacity of all the hard drives you need to back up, then add 20 or 30 percent for the vagaries of compression. The total equals the tape capacity you need (whether in single tapes or the aggregate in a tape library). You also need to decide whether you're



Tape Drives: Bigger Is Better

Macworld Lab testing shows a direct relationship between the two critical qualities of a tape backup system: the bigger its capacity, the faster it performs—good news as hard drives grow past the 1GB or 2GB common today. (Uncompressed, Travan tops out at 2GB, DAT at 4GB, Exabyte at 7GB, and DLT at 20GB.) Note that DLT mechanisms, which suffer from a lot of overhead involved in starting and stopping the tape, copy the single big file about 25 percent faster than they do the many small files.

■ Best result in test. Products in order of overall speed. Results shown in megabytes per minute. Longer bars are better.



Mechanism Key: E8 = Exabyte EXB 8mm; HP = HP C1533A DAT; Q2 = Quantum DLT 2000; Q4 = Quantum DLT 4000; Sea = Seagate CTMS3200 Travan; S5 = Sony SDT 5000 DAT; S7 = Sony SDT 7000 DAT.

Behind Our Tests

We tested tape drives on two different backup scenarios: a typical office worker's or professional's drive filled with many small documents, and a video-editor's drive containing a single huge file (a 400MB QuickTime movie). Both backups were performed with verification on, which is typical and recommended; we then restored each backup and ascertained that there was no corruption. We used Dantz Development's Retrospect 3.0 with 8MB of memory allocated to it on a Power Mac 7500/100 running System 7.5.2 and equipped with 32MB of RAM and a 1GB internal drive.—Macworld Lab testing supervised by Mark Hurlow

Tape Drives: Four Key Types

Company	Product	Star Rating*	List Price/ Company's Estimated Price	Phone	Format	Mechanism	Native Capacity (in MB)	Cost of Tape	Warranty (in years)
APS	DLT30	★★★/6.5	\$4000/\$4000	816/483-6100	DLT	Quantum DLT 2000	15	\$45	2
APS	HyperDAT Pro	★★★/5.9	\$1100/\$1100	816/483-6100	DAT	Sony SDT 7000	4	\$25	2
	Editors' Choice								
Direct Connections	DC DLT 4000	★★★★/7.4	\$3495/\$3495	612/937-9771	DLT	Quantum DLT 4000	20	\$100-\$110	2
	Editors' Choice								
Direct Connections	DC SDT 7000	★★★/6.6	NP/\$999	612/937-9771	DAT	Sony SDT 7000	4	\$25	1
DynaTek	DAT 8-OSSD	★★/4.6	\$1299/\$1099	902/832-3000	DAT	Sony SDT 5000	4	\$25	1
Exabyte	EXB-8700	★★/4.9	\$2300/\$1995	303/442-4333	8mm	EXB-8700	7	\$25	2
Exabyte	EXB-8505XL	★★/4.4	\$1795/\$1595	303/442-4333	8mm	EXB-8505XL	7	\$25	2
FWB	HammerDLT 20G	★★★/5.9	\$6499/\$5999	415/325-4392	DLT	Quantum DLT 4000	20	\$100-\$110	2
FWB	HammerDAT 8000	★★/4.7	\$1539/\$1429	415/325-4392	DAT	HP C1533A	4	\$25	1
Hewlett-Packard	SureStore Tape 6000e	★★/4.2	\$1700/\$1300	970/669-8000	DAT	HP C1533A	4	\$25	1
MegaHaus	Mac 8 616HPX	★★★/5.5	\$1079/\$1079	713/534-3919	DAT	HP C1533A	4	\$25	1
MegaHaus	Mac 2616 QWCX	★★/4.6	\$469/\$469	713/534-3919	Travan	Seagate CTMS3200	2	\$35	2
MicroNet	Premier DLT	★★★/6.0	\$7115/NP	714/453-6000	DLT	Quantum DLT 4000	20	\$100-\$110	2
Microtech	Blue Stream DAT	★★/4.3	\$1599/\$1399	203/468-6223	DAT	HP C1533A	4	\$25	2
ProDirect	PD DAT 4000	★★/3.4	\$1195/\$900	612/941-1805	DAT	HP C1533A	4	\$25	2
Quantum	Quantum DLT 2000XT	★★★★/7.0	\$4200/NP	408/894-4000	DLT	Quantum DLT 2000	20	\$100-\$110	2
Seagate	3200	★★/4.9	\$339/NP	714/252-7800	Travan	Seagate CTMS3200	2	\$35-\$40	2

NP = Not provided. *Based on features, implementation, innovation, performance, reliability, ease of use, and value. (See Star Ratings section for full explanation.)

better off with a system, such as DLT, that is more efficient on streaming data, or one like DAT that works better with numerous small files.

How much will your ideal system cost? The Travan systems are by far the least expensive—less than \$500. However, Travan tape is expensive, at about \$35 by mail order for a 2GB cassette. DAT systems vary widely in price, from Direct Connections' (<http://www.directdc.com>) \$1000 system to FWB's (<http://www.fwb.com>) \$1400-plus unit; 4GB DAT cassettes are no bargain at about \$25 each. Exabyte's 8mm systems are one-fourth to one-third slower than DAT systems and sell for about \$200 more than the FWB DAT. Exabyte's primary advantages over DAT are its 7GB capacity and inexpensive cassettes, which cost only about \$25 each. The internal Exabyte sells for \$1600, or about \$400 less than the external unit; the disadvantage of an internal unit, of course, is that you can't pass it around among your colleagues—that's a lot of money for a single-user system.

The DLT systems we looked at range from a street price of \$3500 for Direct Connections' unit to a list price of \$7000 for MicroNet's—given those prices and the reality that your network will wipe out a DLT's performance advantage,

DLT only makes sense for two specialized uses: on a network with too much data for a DAT or 8mm system to back up, or for local use with digital-video, photo-editing, or other applications that produce huge files. Under those circumstances, DLT has no substitute. However, be forewarned that tapes for DLT systems can be hard to find.

The Last Word

Based on our performance results, we were most pleased with the DAT and DLT technologies. Although the latter tends to be pricey, it can't be beat when it comes to speed across a network, and it's especially good with large files—one of the Mac's specialties as well. To determine our Editors' Choice, then, we've picked the DAT and DLT drives that offer the most for your money. As it turns out, both come from Direct Connections and stand out because of features above and beyond their price and performance. Because 8mm and Travan systems fill no significant gaps in capacity—and because the implementations we tested were not that impressive—we have no Editors' Choice for these formats.

Although tape drives are facing new competition from technologies such as recordable CD drives, our test results

show that the tape medium isn't losing any of its strength in the meantime. **m**

DAN LITTMAN has reported on business technology for ten years.

TAPE-BACKUP SYSTEMS

MW

EDITORS' CHOICE

A tape-backup system should be capacious, fast, and as inexpensive as that combination permits.

Digital Audiotape

★★★/6.6 Direct Connections SDT 7000

This is the least expensive DAT system we looked at, though it uses the Sony DAT mechanism (which is about 20 percent faster than the HP mechanism) and is housed in a solid metal case. **Company:** Direct Connections (612/937-9771, <http://www.directdc.com>). **Company's estimated price:** \$999.

Digital Linear Tape

★★★★/7.4 Direct Connections DLT-4000

Again, Direct Connections wins by beating the competition on price—as little as half what some vendors charge for the same mechanism. The case features an extra power plug and a protected SCSI ID selector. **Company:** Direct Connections. **Company's estimated price:** \$3495.

MACWORLD August 1996 145



REGULAR



EXTRA BOLD



ITALIC



SCRIPT



EXTENDED



CONDENSED

SEE ALL TYPES AT SEYBOLD SAN FRANCISCO.

Any way you look at it, Seybold San Francisco will show you all types of ways to help you succeed. Like the top graphics and publishing technologies, software, online publishing innovations, multimedia tools, color output

devices, prepress products and more. Along with all types of leading industry suppliers that will demonstrate first-hand how these solutions can improve the way you do business. We'll even have all types of show floor activities and events so you can see how products are being applied in a variety of industries. And if you really yearn to learn, our educational program offers all types of courses, seminars and conference sessions to update you on the latest tools and technologies.

So, with all the amazing ideas to be found at Seybold, doesn't it sound like just the type of event for you?

**EXPOSITION
SEPT. 11-13**

**CONFERENCE
SEPT. 9-13**

**SAN FRANCISCO
CALIFORNIA**

**MOSCONE
CENTER**



**SEYBOLD
SAN FRANCISCO**

FREE VIP EXPO PASS!

SAVE \$50!

Name _____ SF55

Company _____

Address _____

City, State, Zip _____

Phone/Fax _____

Mail: SSF 96, P.O. Box 5856, San Mateo, CA 94402-0856 • Fax: 415-525-0199

For conference information via the web, access <http://www.sbexpos.com>

QUESTIONS? CALL 800-488-2883

FOR GREAT DEALS ON TRAVEL, CALL 800-488-2883

Presented by Seybold Seminars ©1995 SOFTBANK Exposition and Conference Company No one under 16 admitted

Choosing a Mac-Savvy Internet Provider

THE RIGHT CONNECTION MAKES ALL THE DIFFERENCE

BEFORE YOU LOOK FOR an Internet service provider (ISP), you must first decide why you need Internet access and how you plan to use the Internet. There's a world of difference between simply needing E-mail access and centering your business around Internet connectivity.

What Do You Need? First, write down what you want to do on the Internet now, then what you might want to do in six months. (On the Internet, so much can change in six months that projecting further is basically futile.) Do you want your own home page on the Web? If so, do you want an extensive Web site that handles transactions or offers searching or forms? Do you want to participate in real-time chats (IRC) or browse Usenet? Do you need more than one E-mail account (one for you and one for a family member)? How often do you plan to be online, and for how long?

Making a List Next, make a list of possible providers. If you're already online, consult one of the listings to find a provider in your area. There are also nationwide Internet providers (such as UUNET, PSI, Netcom, and Earthlink) that are widely accessible in the United States. If all else fails, look in your local telephone directory under "Internet," "Networking," or (worst case) "Computers," or on the Web at <http://www.celestin.com/pocia/> and <http://www.thelist.com/>.

Once you have a list of providers, it's time to get information about them. If you're already online and a provider has a Web site, you might be able to get most of this information without having to pick up the phone.

Does It Know the Mac? First and foremost, determine whether the ISP understands and supports the Macintosh. There are a few Mac-only ISPs, but most serve a variety of platforms and some aren't

familiar with the Mac. Ask if the provider supports the Mac, then ask if it supports MacTCP and Open Transport. If the provider doesn't explicitly offer support for the Mac or doesn't understand what you're asking, take your business elsewhere.

Ask whether the provider has support personnel who specialize in the Mac. A good provider will have at least one person on its tech-support staff who handles Macintosh issues. The more Mac-savvy support personnel it has, the better. Also ask what portion of its customer base uses Macs; it probably can't

net Connection Kit), ask if the provider supports your software.

At the very least, the provider should give you a written description of the MacTCP and Open Transport settings necessary to connect your Mac to its system, along with the names of the machines to use as your mail server, news (Usenet) server, and name server. If you'll be accessing the provider via a modem, the provider will also have to provide phone numbers and settings for using PPP or SLIP. This information is different for every provider.

It's unlikely that an ISP will provide documentation covering the breadth and depth of the Internet. You may want to consider a book that goes into some detail. Two favorites are *The Internet and the World Wide Web*, by Angus Kennedy and Adam Engst (Rough Guides, 1995), and Adam Engst's *Internet Starter Kit for Macintosh* (Hayden Books, 1995).

Quality Tech Support If you can't reach your provider's tech-support people, it doesn't matter how well they know the Macintosh. In case you can't reach them, you should find out if you can leave voice mail or E-mail, and how quickly they respond. Good tech sup-

port will get back to you by phone or E-mail within 24 hours. Also, some ISPs have an automated status line—obviously, good providers keep their message updated and accurate.

Many ISPs also offer support via E-mail, a series of FAQs, or local Usenet newsgroups. I'm a big fan of providers that maintain local newsgroups: not only do you see how the provider responds to questions, but you learn how others are using the Internet.

Busies Many providers experience



give an exact answer, but it's encouraging if the provider has a good idea.

Software and Documentation The basic software for connecting to the Internet (MacTCP or Open Transport) comes with System 7.5.X, but you'll probably also need SLIP or (more likely) PPP software to dial your modem and manage your connection. If the ISP provides software, it will probably be a collection of shareware or freeware—that's fine, since much of the best Mac Internet software falls into this category. If you've purchased software (such as the Apple Inter-

Macworld ONLINE

The Ultimate Macintosh Resource Site
for everyone who owns a Macintosh!

NEW!

PRODUCT DIRECTORY

A fully-searchable,
regularly updated
listing of Macintosh
products & services.

Online. Free.



Plus...check out
Macworld Online's
other hot areas:
late-breaking
editorial on Apple,
news and reviews,
GameLine, the
Web's most carefully
culled Software
Library and more.



Macworld Online.
It's everything
you need.

<http://www.macworld.com>

Bugs and Turkeys



AppleShare 4.2.1 server software, the most recent, fully native version and the only version compatible with the PCI Bus, according to Apple, is not currently available through retailers but only comes bundled with Workgroup Servers. Sources at Apple say owners of desktop PCI machines can upgrade from 4.0.2, but online Read Me files say Apple doesn't support use of earlier versions of AppleShare on desktop PCI models. Apple Computer, 408/996-1010, <http://www.apple.com>.



The Macworld "Group Hug" Turkey goes to the growing ranks of software publishers who feel that it's perfectly OK to release beta software—excuse us, *preview* software—and let users find and report the bugs. As one cyber-CEO has said, "It's a great way to get 5 million beta testers gratis." During the past year, Netscape and America Online have mooched off the indentured masses, and rumor has it Apple will release a working beta of its Copland operating system before releasing the final version.



Claris FileMaker Pro 3.0 currently runs only on Windows 95 systems. Since 3.0-converted files are not backward-compatible, this presents a problem for users who share files between Macintoshes and Windows 3.1 machines. Claris estimates that a Windows 3.1-compatible version of FileMaker 3.0 will be available sometime in June. Claris, 408/987-7000, <http://www.claris.com>.

Macworld will send you a Bug Report or Turkey Shoot T-shirt if you are the first to inform us of a turkey or a serious, reproducible bug that we report in this column. See How to Contact Macworld.

peak usage in the evening, when users get home from work and check their E-mail. Ask the provider how it handles busies and whether they're a recurring problem. The provider will probably paint a rosy picture, so ask for its main modem number and then call it in the evening (between 7 and 10 p.m.) to see if you get a busy signal. (If you hear modem tones,

just hang up.) Also call at a time you think will be typical for your use. If you don't get through on the first call, try a second and third time. If you don't get through on the third call, ask the provider what it's doing to address the problem.

Regional or National? If you travel frequently and will need to access the Internet while on the road, consider a nationwide provider. Pricing plans for these providers vary greatly; in some cases the cost of a few long-distance calls to a regional provider may be less expensive.

Smaller regional providers might seem like fly-by-night operations (and some are), but many are well established and quicker to add services and correct problems (particularly phone or modem troubles) than nationwide providers. When considering regional providers, look for one that's been in business at least a few years.

Pricing Rates for dial-up Internet access are currently about \$10 to \$30 a month. With Internet providers you get what you pay for, and the least expensive often provide the least value. You can probably find "unlimited" PPP access dirt cheap, but will you get anything but a

Streetwise Shopper

Colorize 2.0 DS Design is offering a \$149 competitive upgrade to Colorize 2.0 (Dec 95 ★★★) from any other image-editing application; regular retail price is \$495. DS Design, 919/319-1770, <http://www.dsdesign.com>.

Informed Filler for Newton Shana offers the mobile-computing component of its line of electronic forms software, plus Informed Manager, for \$149. Shana, 403/433-3690, <http://www.shana.com>.

Multimedia Dogs Inroads Interactive is offering this CD-ROM for \$10 plus shipping (\$5 domestic, \$10 international) while supplies last. Mention the Idealist mail list. Inroads, 303/444-0632, <http://www.inroadsint.com>.

WordPerfect 3.5 Corel is offering a free update to WordPerfect 3.5 (Jun 96 ★★★/7.4) owners. The update includes bug-fixes; enhancements to the HTML export filter—you can now export graphics as well as text—and to the HTML macros; 150 Bitstream fonts; and 1000 clip-art images. Corel, 800/451-5151, <http://www.corel.com>.

busy signal when you call? Is the system unavailable for days at a time? Inexpensive providers are not all bad, but it's best to be wary.

Some pricing plans are "flat rate" (the fee is the same no matter how much or how little time you use), some use hourly schedules (the fee varies based on how long you're connected), and some are a mixture of the two (a monthly rate covers the first ten hours; additional hours are billed on a per-hour basis). If you don't plan to spend a lot of time online each month (say, less than 10 or 15 hours), an hourly plan may be a better option. Otherwise, look for a flat-rate plan.

Many providers discount their pricing significantly if you're willing to pay for 3, 6, or 12 months at a time. Also, some providers have special rates for particular Internet books or software packages: be sure to ask about discount pricing and special deals.

Special Considerations and the Future Many ISPs provide more than mere connectivity. If you want to have your own Web page, ask if the ISP has a Web server its customers can use; if so, ask if there's a limit to how much material you can make available.

If you need more than one E-mail address, ask how that would be handled. Some providers might give you additional addresses for free, some might charge you for additional accounts, and others will be somewhere in-between. America Online handles this nicely, since each account can have up to five screen names. If you require multiple E-mail addresses and don't need direct Internet access, AOL might be worth considering.

Ask about time limits—some providers don't limit the length of online sessions, but some enforce a three-hour session limit, a "two hours on, two hours off" policy, or something similar. Ask for the provider's session-limit policy.

Finally, you should pick a provider that not only meets your immediate needs, but is also *currently* capable of meeting your needs six months from now (why do you think I made you list those needs?). Sure, you could always move to a different provider at a later date,

THE AMCOEX INDEX OF USED MACINTOSH PRICES

Machine (RAM/Hard Drive)	Average Sale Price	Monthly Change
PowerBook 140 (4MB/40MB)	\$550	-\$25
PowerBook 165 (4MB/80MB)	\$775	-\$50
PowerBook 180 (4MB/80MB)	\$925	-\$100
PowerBook Duo 230 (4MB/80MB)	\$700	-\$25
Mac IIsi (5MB/40MB)	\$250	+\$25
Mac IIci (4MB/80MB)	\$350	-\$100
Mac IIfx (4MB/80MB)	\$375	-\$25
Centris 650 (8MB/230MB)	\$750	-\$25
Quadra 800 (8MB/230MB)	\$1100	-\$25
Quadra 900 (8MB/160MB)	\$950	+\$25
Power Mac 7100/80 (8MB/350MB)	\$1275	-\$25
Power Mac 8100AV (8MB/500MB)	\$2125	+\$25

Index provided by the American Computer Exchange of Atlanta (800/786-0717). It reflects sales during the week of May 20, 1996. Configurations include keyboard and exclude monitor and display board for noncompact models.

but why do something twice when you can do it right the first time? Also, the more you depend on your Internet connectivity, the more trouble it is to change your E-mail address and other online contact information.

GEOFF DUNCAN is the managing editor of TidBITS (<http://www.tidbits.com/>), the online Macintosh weekly, and also works as a freelance Macintosh and Internet consultant. You can E-mail him at gaduncan@balcyon.com.

Letters

Is This the Real WriteNow? I've seen postings on America Online that the word processor WriteNow had been discontinued. I'm puzzled because I recently received a sales brochure from Softkey International offering WriteNow 4.0. Is the product in the brochure an entirely different product, or is this a re-issue of the discontinued product by another company?

DARLENE O'CONNELL
Sioux Falls, South Dakota

WriteNow, originally sold by T/Maker, ended up as a Softkey International product after a series of mergers. The current version, 4.0.2, has a street price of about \$59. See "Lean Writers," Macworld, March 1995, for details on this speedy word processor.—SUZANNE COURTEAU

Not getting the treatment you deserve? Or have you received heroic service? Write to the *Consumer Advocate* at Macworld, 501 Second St., San Francisco, CA 94107, or send us a fax at 415/442-0766. **m**

Macworld DIRECTORY

Hot new directory

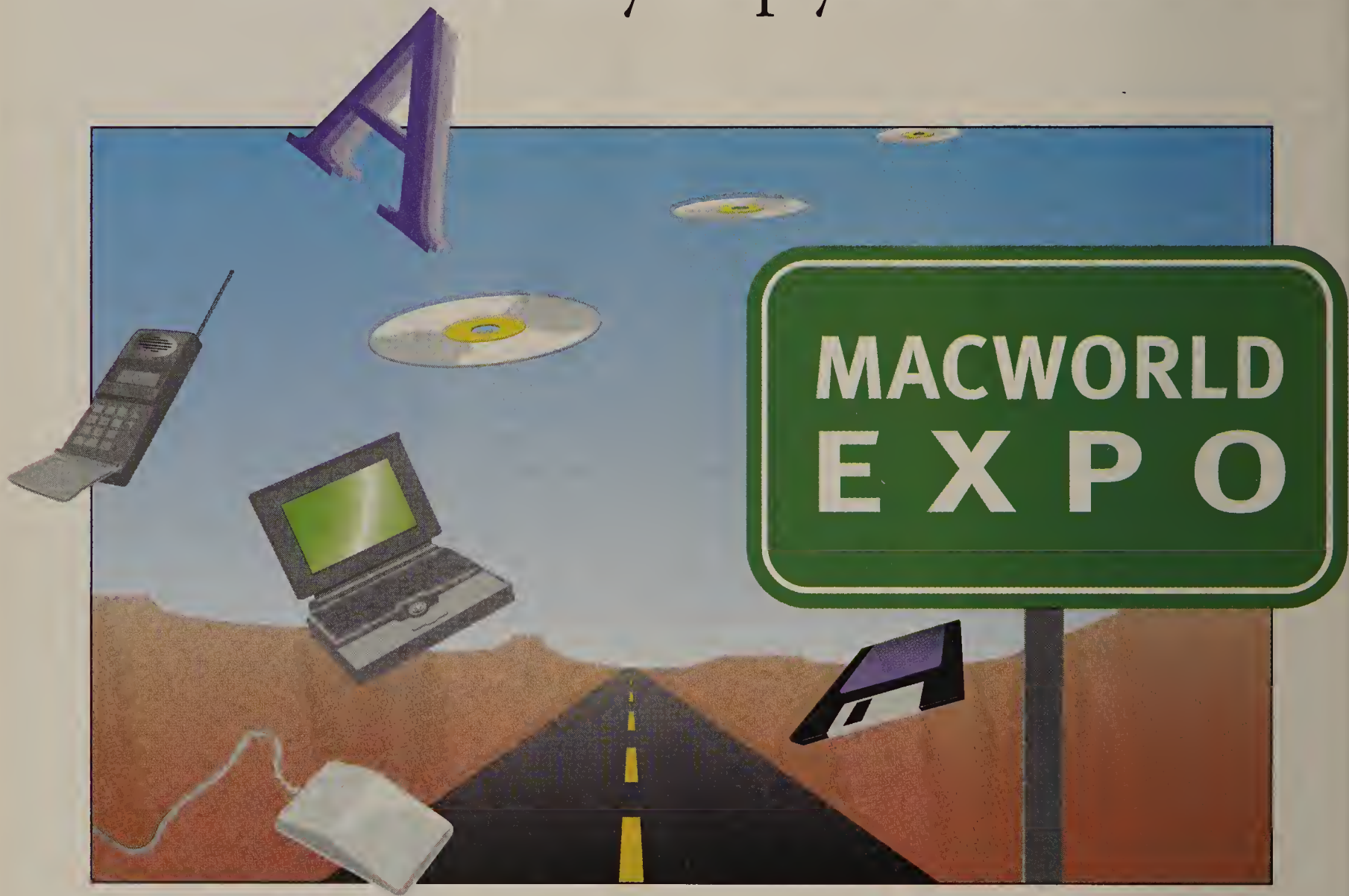
Don't miss
**Macworld
Directory**,
the **hottest**
new section
to hit *Macworld*.

Macworld
Directory
is your one-stop
buying resource,
putting you in
touch with the
products and
services you're
looking for.

You'll find
Macworld
Directory
after the Macworld
Shopper section.

Forget Gas, Food & Lodging

On the Information Superhighway
this is the only stop you'll need.



Don't want to be bypassed on the Information Superhighway? Then plan a detour to MACWORLD Expo. Here you'll test drive the products and services that enable you to maximize the potential of the Macintosh now and down the road.

MACWORLD Expo is your chance to see hundreds of companies presenting the latest in turbo-charged Macintosh technology. Make side by side comparisons of thousands of Macintosh products. Learn from the experts how to fine-tune your system and what products will keep your engine running smooth. Attend a variety of information-packed conference programs that provide the skills and knowledge to put you in the driver's seat. So pull on in and take that new Mac for a spin.

Add a stop at any of our upcoming MACWORLD Expo events to your information roadmap. With shows in **San Francisco** and **Boston**, we're just around the next bend.

Please send me more information on MACWORLD Expo.

I am interested in: ☐ Exhibiting ☐ Attending

☐ **San Francisco** ☐ **Boston**

Name _____

Title _____

Company _____

Address _____

City/State/Zip _____

Phone _____ Fax _____

Mail to: MHA Event Management, 1400 Providence Highway,
Norwood, MA 02062 Or Fax to: 617-440-0300

MW

Star Ratings

HARDWARE AND SOFTWARE PRODUCTS AT A GLANCE

Macworld Star Ratings lets you compare Macintosh products based on the authoritative assessments in our reviews and features. The number of stars indicates the product's level of quality; each product also gets a numeric score that provides a more exact assessment of the product's quality within that level. We evaluate seven factors to derive the Star Rating: feature set, design implementation, performance, reliability, ease of use, innovation, and value. We take these evaluations, weight their importance for each class of product, and calculate the final score. The higher the score, the better a product is, even among products with the same number of stars. The following list shows how the ratings and scores relate.

★★★★★	9.0 to 10.0	Outstanding
★★★★	7.0 to 8.9	Very Good
★★★	5.0 to 6.9	Good
★★	3.0 to 4.9	Flawed
★	0.0 to 2.9	Unacceptable

This section also lists products that have been awarded an **Editors' Choice** designation in a *Macworld* product comparison.

If a product has been upgraded since our last assessment, the most recent version number appears in parentheses after the main reviewed version number. To read a full review of any product in the listing, please consult the issue indicated at the end of the listing or search for the product via *Macworld Online* (keyword *Macworld* on America Online; URL <http://www.macworld.com> on the World Wide Web).

Vendors: Please write to *Macworld Star Ratings*, 501 Second St., San Francisco, CA 94107 to inform us of changes in the version number or list price of your product, or of changes to your phone number.

software

BUSINESS TOOLS

- ★★★★/8.8 **4th Dimension 3.5**, ACI US, 408/252-4444, \$895. Leading Mac database gets important improvements. *Mar 96, p. 60*
- ★★ **Adobe Acrobat 2.0 (2.1)**, Adobe Systems, 415/961-4400, \$195. The font fidelity of this portable-document software is uneven. *Mar 95, p. 59*
- ★★★ **Adobe Acrobat for Workgroups 2.0 (2.1)**, Adobe Systems, 415/961-4400, \$1595. Portable-document software for workgroups is inexpensive but resource-intensive. *Mar 95, p. 59*
- ★★★★ **ArcView 2.1**, Environmental Systems Research Institute, 909/793-2853, ext. 2050, \$995. Sophisticated GIS program is easy to customize. *Jan 96, p. 55*

- ★★★★/8.4 **ClarisWorks 4.0**, Claris, 408/727-8227, \$129 (estimated). The program's speed, clean design, and low resource requirements put the big boys to shame. *Jun 96, p. 98*
- ★★★★/9.7 **Data Desk 5.0**, Data Description, 607/257-1000, \$625. Classic statistics program adds dazzling new features. *Mar 96, p. 79*
- ★★★★ **DeltaGraph Pro 3.5**, DeltaPoint, 408/648-4000, \$195. Easy-to-use graphing software stands out from the pack. *Jan 96, p. 57*
- ★★★★/8.2 **FileMaker Pro 3.0**, Claris, 408/727-8227, \$199 (estimated). FileMaker 3 is now relational, Power Mac native, and more useful than ever. *Jun 96, p. 98*
- ★★★/6.1 **Mac Manager 3.1**, ELS, 352/375-0558, \$79. Desktop security takes on a Copland-style look, complete with a few ragged edges. *May 96, p. 78*
- ★★/4.4 **MapLinx 3.0**, MapLinx, 214/231-1400, \$149.95. Useful tool if you only need to see where your customers are located. *Apr 96, p. 82*
- ★★/4.6 **McAfee VirusScan**, McAfee Associates, 408/988-3832, \$65. Virus-detection package falls short on features compared with other commercial competitors. *May 96, p. 74*
- ★★★ **Meeting Maker XP 3.1**, On Technology, 617/374-1400, \$249; \$890 for 10 users. Group scheduling program is useful for small and midsize businesses. *Jan 96, p. 69*
- ★★★★/7.1 **Microsoft Excel 5.0**, Microsoft, 206/882-8080, \$295 (estimated). Although it's the only game in town for number-crunching professionals, Excel 5 is a glutton for RAM and disk space. *Jun 96, p. 98*
- ★★★★ **Microsoft FoxPro for Macintosh 2.5 (2.6)**, Microsoft, 206/882-8080, \$495. The relational database offers fast searching but an uneven interface for users. *Apr 94, p. 56*
- ★★★★/7.1 **Panorama 3.0**, ProVue, 714/841-7779, \$290 (estimated). This database program features easy, flexible forms, hypertext links, and fast network abilities. *Jun 96, p. 98*
- ★★★★/7.1 **PhonePro 3.0**, Cypress Research, 408/752-2700, \$349. Telephony standard improves programming, sound handling. *Jul 96, p. 72*

COMMUNICATIONS/NETWORKS

- ★★★/6.5 **BBEdit 3.52**, Bare Bones Software, 508/651-3561, \$119. This Web-authoring tool targets power users. *Jun 96, p. 61*
- ★★★/6.9 **Claris Emailer 1.0v2**, Claris, 408/987-7000, \$89. One-stop E-mail sending, receiving, and storing, plus a single all-encompassing address book. *Apr 96, p. 102*
- ★★★★/8.0 **CommuniGate 1.0**, Stalker Software,

415/383-7164, free for 5 users; 25 users \$200; unlimited users \$600; gateway modules \$100 each. CommuniGate lets you send mail, faxes, print jobs, and electronic pages. *Apr 96, p. 63*

- ★★/4.6 **COPSTalk for Windows 1.2f**, CoOperative Printing Solutions, 770/840-0810, \$179 per user. Windows 95-compatible software gives PCs AppleTalk capability. *Mar 96, p. 67*
- ★★★/5.8 **CU-SeeMe 1.0**, White Pine Software, 603/886-9050, freeware. Great for avoiding long-distance phone charges, but Internet is poor vehicle for video transmission. *May 96, p. 82*
- ★★/4.9 **CyberFinder 2.0**, Aladdin Systems, 408/761-6200, \$30. Software uses the Finder to track Internet URLs. *Mar 96, p. 82*
- ★★★★/7.4 **DragNet 1.03**, OnBase Technology, 714/830-5682, \$39.95. DragNet helps you sort and categorize Internet addresses. *May 96, p. 52*
- ★/1.4 **httpd4Mac 13b**, Bill Melotti, free. Minimalist freeware: feature-poor and unreliable Mac Web server. *Apr 96, p. 86*
- ★★★/5.2 **InterServer Publisher 1.0.1**, Intercon, 703/709-5500, \$795. Fast and functional, but missing key features and documentation. *Apr 96, p. 86*
- ★★/3.1 **LANscape SNMP 2.1**, Sonic Systems, 408/736-1900, \$799. SNMP console sports some sophisticated features, but its interface, basic features, and documentation need work. *Jul 96, p. 74*
- ★★★/6.4 **LANsurveyor 3.0**, Neon Software, 510/283-9771, 5 zones, \$395; unlimited zones, \$695. LANsurveyor maps and monitors your AppleTalk network. *May 96, p. 70*
- ★★★★ **MacAdministrator**, Hi Resolution, 508/463-6956, \$395 (10-user pack). Group administration tool is a great helper for network administrators. *Dec 95, p. 75*
- ★★★/6.3 **MachTen 4.0**, Tenon, 805/963-6983, \$695. Fast but hard to use, requiring Unix administration skills. *Apr 96, p. 86*
- ★★/4.0 **MacHTTP 2.2**, Quarterdeck/StarNine, 510/649-4949, \$95. Capable Mac Web server shareware but unreliable under heavy load. *Apr 96, p. 86*
- ★★★/5.0 **MailKeeper 1.0.2**, Nisus Software, 619/481-1477, \$35. Quick online information database could be more convenient. *Apr 96, p. 70*
- ★★★★/7.4 **Navigator 2.0**, Netscape Communications, 415/528-2555, \$49 without manual, \$69 with manual. Netscape pushed beyond Web browsing. *May 96, p. 50*
- ★★★★/7.3 **NetMeter 1.0**, AG Group, 510/937-7900, \$395. Keep tabs on your Ethernet network via sights and sounds. *Jun 96, p. 73*
- ★★★★/7.8 **NetPresenz 4.0**, Stairways Shareware, no

continues

Star Ratings

phone, \$10 (shareware). Internet server on a shoe-string. May 96, p. 55

- ★★★★6.9 **PageMill 1.0**, Adobe Systems, 415/961-4400, \$149. Drag-and-drop Web publishing software masks HTML complexities. Mar 96, p. 56
- ★★★★8.8 **PageNow 1.5**, Mark/Space Softworks, 408/293-7299, \$119. Alphanumeric paging software gets the message across. Mar 96, p. 70
- ★★★★5.8 **Personal MacLAN Connect 5.51**, Miramar Systems, 805/966-2432, \$199 per user. Windows 95-compatible software lets PC and Mac users communicate via AppleTalk. Mar 96, p. 67
- ★★★ **QuickMail 3.0 (3.5)**, CE Software, 515/221-1801, \$199 to \$3799. Good choice for most people, though rule-based features are incomplete. Jan 95, p. 59
- ★★★★6.5 **SiteMill 1.0.2**, Adobe Systems, 415/961-4400, \$595. Simple Web-site manager is welcome but incomplete. Jul 96, p. 67
- ★★★ **SnapMail 2**, Casady & Greene, 408/484-9228, \$250 (5 users); \$420 (10 users); \$1940 (50 users). E-mail software is easy to install, but its gateway interface is kludgy. Dec 95, p. 75
- ★★★★7.3 **StreamWorks 1.0**, Xing Technology, 805/473-0145, free. Netscape plug-in delivers CD-quality audio; no Mac server available. Jul 96, p. 92
- ★★★★7.2 **Talker 2.0**, MVP Solutions, <http://www.mvpsolutions.com>, free. Netscape plug-in uses no more bandwidth than text does, but won't shut up until you go to another Web page. Jul 96, p. 92
- ★★★★5.5 **Timbuktu Pro for Networks 2.0**, Farallon, 510/814-5000, single user \$139; 2-user pack \$189; 100-user pack \$3999. Remote control and file-sharing standby gets a ho-hum upgrade. May 96, p. 68
- ★★★★7.3 **Voyager 1.0**, Virtus, 919/467-9700, free. VRML browser lets you view 3-D Web sites, but navigation tools are nonintuitive. Jul 96, p. 92
- ★★★★7.3 **WebStar 1.2.1**, Quarterdeck/StarNine, 510/649-4949, \$795. Reliable, easy to use, and reasonably fast Mac Web server. Apr 96, p. 86. **Editors' Choice** for best Web server software.

DESKTOP PUBLISHING

- ★★★★ **Adobe PageMaker 6.0**, Adobe Systems, 206/622-5500, \$895. Page-layout program's upgrade includes practical and powerful improvements. Nov 95, p. 60
- ★★★★7.2 **FontMonger 1.5.7**, Ares Software, 415/578-9090, \$149.95. Easy font modifications, from redrawing characters to converting font formats. Apr 96, p. 102
- ★★★★ **FrameMaker 5.0**, Adobe Systems, 408/975-6000, \$895. Page-layout program is a good choice for technical-document creation. Nov 95, p. 63
- ★ **HoTMetal Pro 2.0**, SoftQuad, 416/239-4801, \$195. Web authoring software is hampered by a poorly designed interface. Jan 96, p. 65
- ★★★★7.0 **PageTools 2.0**, Extensis, 503/274-2020, \$99.95. Plug-ins add power and precision to PageMaker. May 96, p. 65
- ★★★★ **QuarkXPress 3.2 (3.31)**, Quark, 303/894-8888, \$895 (\$995 for Power Macintosh). A must-have layout tool for color publishers. Nov 93, p. 51
- ★★★★7.4 **theTypeBook 4.02b**, Rascal Software, 805/255-6823, \$49.95. Creates font reference books from ready-to-print specimen pages. Apr 96, p. 102

- ★★★★5.1 **Xdream 1.0**, Vision's Edge, 904/386-4573, \$149. Single Quark XTension comprises 24 tools ranging from useful to indispensable. Jun 96, p. 50
- ★★★★7.1 **XPert Tools 1.0**, XChange, 970/229-0620, \$99 per volume, \$169 for both. If you need to go beyond Quark's feature set, XPert Tools will take you there. Jun 96, p. 50

EDUCATION/ENTERTAINMENT

- ★★★★8.1 **Alien Tales**, Brøderbund, 415/382-4700, \$45. Brøderbund enlivens classic literature for kids. Jun 96, p. 56
- ★★★★6.8 **The Amazing Writing Machine**, Brøderbund, 415/382-4700, \$45 CD, \$35 floppy. Creative writing with a spin. Jun 96, p. 56
- ★★★ **AmoebArena 1.0**, Casady & Greene, 408/484-9228, \$49.95. Engaging strategy game pits amoeboid against amoeboid. Jan 96, p. 75
- ★★★★8.6 **The Cartoon Guide to Physics**, HarperCollins Interactive, 212/207-7000, \$49.95. Entertaining introduction to basic kinematics. Apr 96, p. 78
- ★★★★6.2 **Cliffs StudyWare for Algebra 1.0**, Cliffs Notes, 402/423-5050, \$49.95. Algebra tutorial makes poor use of multimedia. Jul 96, p. 76
- ★★★★8.5 **Descent 1.0**, MacPlay, 714/553-3530, \$49.95. Which way is up? 360-degree 3-D maneuverability will leave you spinning. Apr 96, p. 72
- ★★★★ **Full Throttle**, LucasArts, 415/472-3400, \$49.95. Biker adventure game is witty and action-packed. Jan 96, p. 73
- ★★★★6.9 **Fun With Electronics**, Philips Media, 310/444-6500, \$44.99. Multimedia updates a hobby-shop classic. May 96, p. 80
- ★★ **Haight-Ashbury in the Sixties**, Compton's New Media, 619/939-2500, \$49.95. If you can remember the sixties, you probably don't need this CD-ROM. Dec 95, p. 84
- ★★★★8.8 **In the 1st Degree**, Brøderbund, 415/382-4700, \$49.95. Realistic, interactive legal thriller. Apr 96, p. 80
- ★★★ **King's Quest VII: The Princeless Bride**, Sierra Online, 206/649-9800, \$59.95. Adventure game is entertaining, but adults might find its plot silly. Jan 96, p. 75
- ★★★★5.6 **Learn to Speak Spanish 6.0**, The Learning Company, 510/792-2101, \$109. Comprehensive, but doesn't adapt to your needs. May 96, p. 60
- ★★★ **The Legend of Kyrandia, Book 3**, Virgin Interactive Entertainment, 714/833-1999, \$34.95. Enjoyable adventure game features good graphics and sound. Jan 96, p. 77
- ★★★★5.8 **Life's Greatest Mysteries**, A.D.A.M. Software, 770/980-0888, \$39.95. CD-ROM explains imponderables for the medically curious. Jun 96, p. 75
- ★★★★ **Links Pro CD**, Access Software, 801/359-2900, \$69.95. An excellent simulation of golf's many challenges. Jan 96, p. 73
- ★★★★8.5 **Logical Journey of the Zoombinis 1.0**, Brøderbund, 415/382-4400, \$40. A different kind of math program, helping kids develop logical thinking skills without manipulating any numbers. Jul 96, p. 78
- ★★★★8.5 **Marathon 2: Durandal**, Bungie Software Products, 312/563-6200, \$79. A well-crafted action-adventure game, but it's not for the squeamish or those disturbed by violence. Mar 96, p. 85
- ★/2.8 **Meet MediaBand 1.0**, Canter Technology, 415/387-0400, \$49.95. A poorly executed collection of artwork and music masquerading as a game. Jul 96, p. 64
- ★★★ **Out of the Sun**, Domark software, 415/513-8929, \$44.95. Flight-simulation game presents his-

toric and custom battle scenarios. Jan 96, p. 77

- ★★★★ **Passage to Vietnam**, Against All Odds Productions/Interval, 800/558-3388, dept. 100, \$39.95 to \$59.95. Stunning photojournalism CD-ROM sets the standard for multimedia projects. Dec 95, p. 83
- ★★/3.9 **Rebel Assault II**, LucasArts Entertainment, 415/472-3400, \$54.95. Star Wars-inspired game handicapped by minimal game play. Jun 96, p. 63
- ★★★★7.5 **RedShift 2**, Maris Multimedia, 415/492-2819, \$54.95. RedShift 2 lets you explore space from any planet. May 96, p. 71
- ★★★/6.2 **Spanish Native Guide 1.0**, Native Guide Software, 415/802-8085, \$49.95. Adapts to your progress, but pronunciation help is missing. May 96, p. 60
- ★★★★5.3 **Spanish Now 4.0**, Transparent Language, 603/465-2230, \$129. Engaging approach, but poor documentation and confusing interface. May 96, p. 60
- ★★★★5.3 **Total Distortion 1.0**, Pop Rocket, 415/242-2158, \$39.95. A labored mix of interactivity and music videos. Jul 96, p. 64
- ★★★★8.3 **X-Wing Collector's CD-ROM**, LucasArts Entertainment, 415/472-3400, \$59.95. The learning curve is steep, but X-Wing delivers action-packed adventure. Jun 96, p. 63
- ★★★★8.9 **You Don't Know Jack**, Berkeley Systems, 510/540-5535, \$30. "Jeopardy!" with a bad attitude. Mar 96, p. 85

FINANCE/ACCOUNTING

- ★★★★7.1 **Kiplinger TaxCut 95 1995**, Block Financial Software, 816/751-6000, \$39.95; state modules \$24.95. Tax-prep program has an easy-to-use interface and elegant organization but lacks a state version. Apr 96, p. 66
- ★★★★ **M.Y.O.B. 5.0**, BestWare, 201/586-2200, \$139; \$239 with payroll. Well-designed interface makes double-entry accounting easy. May 95, p. 63
- ★★★★8.6 **MacInTax Deluxe 1995**, Intuit, 520/295-3110, \$49.95; state modules \$25. Not only guides you effortlessly through your return, but also gives helpful financial-planning advice. Apr 96, p. 66
- ★★★★5.2 **Personal Tax Edge 1995**, Parsons Technology, 319/395-9626, \$19; state modules \$19. Produces high-quality printed forms but has DOS-inspired interface. Apr 96, p. 66
- ★★★★7.7 **QuickBooks Pro 4.0**, Intuit, 415/944-6000, \$189. Can be customized for your business; Business Library and some Windows features not included. Jun 96, p. 55
- ★★★★8.3 **Quicken Deluxe 6**, Intuit, 520/295-3220, \$59.99. The best-selling package gets bigger and mostly better. Feb 96, p. 65
- ★★/4.9 **WealthBuilder 4.01**, Reality Online, 610/277-7600, \$49.95. This financial planner doesn't quite add up. May 96, p. 74

GRAPHICS

- ★★/4.9 **3D World 1.0**, Microspot USA, 408/253-2000, \$139. Affordable but limited QuickDraw 3D design tool. Jul 96, p. 74
- ★★★★8.4 **Adobe After Effects 3.0**, Adobe Systems, 415/961-4400, \$995 base version; \$1995 Production Bundle. Must-have video-design package enhances motion control and adds effects. Mar 96, p. 54
- ★★★★7.1 **Adobe Illustrator 6.0**, Adobe Systems, 415/961-4400, \$595. Don't let the version number fool you: this is a minor upgrade. Its minor tweaks *continues*

Gear up with

**Macworld
DEPOT**

1.800.257.0374

NATURAL BASEBALL CAP

Macworld's got you covered with this 100% cotton, one-size-fits-all cap.

NEW



DENIM SHIRT

You've seen them modeled by our employees at Macworld Expo, now these 100% preshrunk cotton shirts can be yours. Sizes: M, L, XL.



CANVAS BAG

Carry your possessions in style with this quality canvas tote bag. Measures 13 1/4" x 12" x 4" with 15" handle.

NEW



GRAPHICS TEE

This colorful "Picasso" shirt is a work of art displayed on a 100% preshrunk cotton tee. An excellent conversation starter. Sizes: M, L, XL, XXL.

**Order
today!**



KIDS' TEE

Your child will look adorable in this 100% cotton pint-sized tee. Kids' sizes: S, M, L.



GRANDE LATTE MUG

This huge ceramic mug will hold 16 ounces of your favorite beverage. Also great for soup and cereal.

PHONE ORDER

**Macworld
DEPOT**

1.800.257.0374

ONLINE ORDER

<http://star.macworld.com>

under Macworld
magazine button

MAIL ORDER

Macworld Merchandise
501 Second Street
San Francisco, CA 94107

**PLEASE
PRINT**

Name

Address

City

State

Zip

Phone ()

☐ Visa

☐ Mastercard

☐ Check

☐ Money Order

Card number

Exp

Signature

US SHIPPING

Merchandise value Shipping cost

\$0-9.99

\$4.99

\$10-19.99

\$5.99

\$20-29.99

\$6.99

\$30-49.99

\$7.99

over \$50

\$8.99

Please allow 2 to 4
weeks for delivery.

ORDER FORM

ITEM	QTY	SIZE	PRICE	AMOUNT
Latte mug			\$9.99	
Denim shirt			\$39.99	
Graphics Tee			\$11.99	
Kids' Tee			\$9.99	
Cap			\$12.99	
Canvas bag			\$10.99	
SUBTOTAL				
Add sales tax for CA, IL, NJ, or MA Sales tax				
Shipping (see table at left)				
TOTAL				

Star Ratings

aren't enough to surpass FreeHand 5.5. *Apr 96, p. 54*

★★★/6.3 **Adobe PhotoDeluxe 1.0**, Adobe Systems, 415/961-4400, \$129. "Photoshop Lite" makes questionable compromises in order to appeal to consumer market. *Apr 96, p. 59*

★★★★/8.5 **Adobe Photoshop 3.0.5**, Adobe Systems, 415/961-4400, \$895. Remains the single most significant and capable image editor, but its imperfections and omissions leave some artists searching for alternatives. *Jun 96, p. 78*

★★★★/7.4 **Adobe Premiere 4.2**, Adobe Systems, 415/961-4400, \$795. Video editor offers significant enhancements, including CD-ROM Movie Maker plug-in. *Mar 96, p. 90*

★★★ **Canvas 3.5 (3.5.2)**, Deneba Software, 305/596-5644, \$399. Lots of features but confusing interface. *Jan 94, p. 49*

★★★★/6.9 **Boris Effects 1.01**, Artel Software, 617/566-0870, Premiere version \$350; Media 100 version \$695. Plug-in for Premiere and Media 100 adds video-effects control. *Feb 96, p. 85*

★/1.5 **Chagall 2.0.2**, Technosystems USA, 502/351-0108, \$299. Image-editing application flunks test. *Feb 96, p. 78*

★★★★/8.0 **Claris Impact 2.0**, Claris, 408/987-7000, \$99. Easy and affordable business-graphics software. *Feb 96, p. 66*

★★★ **Colorize 2.0**, DS Design, 919/319-1770, \$495. Colorizing software is effective, but expensive for a one-trick pony. *Dec 95, p. 81*

★★★★/7.5 **Dabbler 2**, Fractal Design, 408/688-5300, \$69. Drawing package offers an easy, affordable natural painting option. *Mar 96, p. 63*

★★★★/7.3 **DrawTools 1.0**, Extensis, 503/274-2020, \$149. Extensions add color, shape, and object tools to FreeHand and Illustrator. *Feb 96, p. 71*

★★/4.5 **Envelopes 1.0**, Letraset USA, 800/343-8973, \$99. Distorts objects but inserts extraneous anchor points as well. *Mar 96, p. 106*

★★★★/7.7 **Extreme 3D 1.0**, Macromedia, 415/252-2000, \$699. A good choice for anyone looking for precise modeling controls—as long as they can live without inverse kinematics, special-effects plug-ins, and QuickDraw 3D support. *Jul 96, p. 60*

★★★★ **Infini-D 3.0**, Specular International, 413/253-3100, \$899. 3-D software does professional-quality rendering and animation. *Jan 96, p. 54*

★★/3.3 **Infinite FX 1.0**, BeInfinite, 404/552-6624, \$149. Many automated reshaping effects, mired by poor organization. *Mar 96, p. 106*

★★★★/8.3 **Kai's Power Tools 3.0**, MetaTools, 805/566-6200, \$199. More-powerful plug-ins, more-baffling interface. *Feb 96, p. 57*

★★★★/8.9 **KPT Final Effects 3.0**, MetaTools, 805/566-6200, \$695. Superb effects library for Adobe After Effects. *Apr 96, p. 69*

★★★★/8.5 **KPT Vector Effects 1.0**, MetaTools, 805/566-6200, \$199. Combines excellent experimentation functions with thoughtful interface design. *Mar 96, p. 106*. **Editors' Choice** for best natural draw software.

★★★/6.2 **LightningDraw GX 1.0**, Lari Software, 919/968-0701, \$299. Lets you combine colors and shapes and experiment with QuickDraw GX fonts. *Mar 96, p. 106*

★★★★/7.2 **Live Picture 2.5**, Live Picture, 408/464-4200, \$995. Lacks support for the blend modes and

numerical focus controls and can only edit the top-most visible layer, but is superfast and its core technology remains as superior as ever. *Jun 96, p. 78*

★★★★/8.1 **Macromedia FreeHand 5.5**, Macromedia, 415/252-2000, \$595. Draw program outperforms competitor, for now. *Feb 96, p. 74*

★★★★/8.5 **MapArt Cartographic Data Bank 1.0**, Cartesia Software, 609/397-1611, \$249 per volume, \$399 for both. Detailed, editable maps spice up your layouts. *May 96, p. 72*

★★★★/7.8 **MapArt Designer Series 1.0**, Cartesia Software, 609/397-1611, \$129 per volume, \$199 for both. Detailed, editable maps spice up your layouts. *May 96, p. 72*

★★★★/8.1 **MiniCad 6**, Graphsoft, 410/290-5114, \$795. Nothing's small about this modular package. *Mar 96, p. 65*

★★★★/8.9 **Painter 4.0**, Fractal Design, 408/688-5300, \$549. Painter 4.0 is the program most artists should own; its painting and special-effects capabilities simply can't be beat. *Jun 96, p. 78*

★★★★/7.2 **QX-Tools 1.0**, Extensis, 503/274-2020, \$149. Ten XTensions that make QuarkXPress more powerful. *Feb 96, p. 73*

★★★ **Ray Dream Designer 3.1.1**, Ray Dream, 415/960-0768, \$349. 3-D graphics program provides competent modeling tools and excellent rendering. *Mar 95, p. 61*

★★★/6.9 **Ray Dream Studio 1.0**, Ray Dream, 415/960-0765, \$499. These 3-D design tools are competent and affordable. *May 96, p. 58*

★★★★/6.5 **theFONDLer 4.0.1**, Rascal Software, 805/255-6823, \$69.95. Font utility diagnoses problems. *Apr 96, p. 84*

★★★/5.0 **Tracer 1.0**, ScanVec, 508/694-9488, \$795. Excellent but expensive autotracing. *Feb 96, p. 85*

★★★★/8.7 **upFront 2.0.1**, SketchTech, 612/379-1435, \$299. A new vendor—SketchTech—improves Alias's venerable entry-level 3-D modeling package. *Mar 96, p. 86*

★★★ **Working Model**, Visual Basic, 415/574-7777, \$2495. Motion-simulation system is a fine product, but a Power Mac version is needed. *Dec 95, p. 79*

★★★/6.3 **xRes 2.0**, Macromedia, 415/252-2000, \$799. Although considerably improved, fast, and easy to learn, this image editor still leaves room for improvement. *Jun 96, p. 78*

MATH/SCIENCE

★★★★/7.5 **Igor Pro 2.0.4**, WaveMetrics, 503/620-3001, \$495. Top-notch scientific graphing package. *Feb 96, p. 90*

★★★★/8.4 **JMP In 1.0**, Duxbury Press, 800/354-9706 (U.S. only), \$54. Student version of stats heavyweight sets the standard. *Jul 96, p. 79*

★★★★ **LabView 3.1**, National Instruments, 512/794-0100, \$1995. Instrumentation software can emulate most scientific and electronic test-bench instruments. *Nov 95, p. 62*

★★★★/7.2 **Minitab 10 Xtra**, Minitab, 814/238-3280, \$895. Updated package offers a complete statistical tool kit. *Jun 96, p. 66*

★★★★/7.4 **Spreadware Statistics Menu 4.0**, Spreadware, 619/772-1758, \$229. Excel users can put Spreadware's statistics to work in minutes. *Apr 96, p. 72*

★★★★/7.1 **SPSS 6.1**, SPSS, 312/329-2400, \$695; modules \$395 to \$495. Mainframe statistics giant has new Mac interface. *Feb 96, p. 82*

★★★★/8.3 **StatView 4.5**, Abacus Concepts, 510/540-1949, \$595. Statistics and graphing package. *Feb 96, p. 81*

ORGANIZATION/PRODUCTIVITY

★★★/5.1 **ACT for Macintosh 2.5.1**, Symantec, 541/334-6054, \$169.95. A weak offering in the field of contact-management and scheduling software, where you don't have to compromise. *Jul 96, p. 62*

★★/4.8 **ACT for Newton 1.0**, Symantec, 541/334-6054, \$99.95. Only die-hard fans of the desktop version could love this portable PIM. *Jul 96, p. 62*

★★★/6.8 **Claris Organizer 1.0**, Claris, 408/987-7000, \$49 (estimated). This simple little PIM is fast, easy to learn, and intelligently designed. *Jun 96, p. 106*

★★★/6.9 **DateBook Pro 4.2**, Now Software, 503/274-2800, \$69.95 (estimated). A well-designed but often sluggish calendar and scheduling program. *Jun 96, p. 106*

★★/3.7 **Day-Timer Organizer 2.0**, Day-Timer Technologies, 415/572-6260, \$59.95. PIM has some rough edges. *Mar 96, p. 92*

★★★/5.2 **Full Contact 3.0**, Pitch Software, 408/374-5504, \$199. Resurrected PIM has been improved—but not enough. *Jun 96, p. 70*

★★★/6.5 **In Control 3.5**, Attain, 617/776-1110, \$219.95. This planner/outliner excels in list management, but not as a calendar or scheduler. *Jun 96, p. 106*

★★★/6.9 **InTouch 2.5.2**, Prairie Group, 515/225-3720, \$49.95. A simple contact manager that doesn't force you to plug information into designated slots. *Jun 96, p. 106*

★★★/5.4 **KeyQuencer**, available online, shareware. Relatively powerful shareware macro program is inexpensive, but doesn't allow you to record macros. *Jun 96, p. 106*

★★★/6.9 **Micro Planner Manager 1.4**, Micro Planning International, 303/757-2216, \$695. Project-management application takes scheduling seriously. *Jun 96, p. 65*

★★★ **Microsoft Works 4.0**, Microsoft, 206/882-8080, \$99.95. Good word processing and drawing tools; poor spreadsheet and database modules. *Jan 95, p. 63*

★★★★ **Now Up-to-Date and Contact 3.5**, Now Software, 503/274-2800, \$99. Calendar/address book combo features several enhancements. *Nov 95, p. 68*

★★★★/7.4 **QuickKeys 3.0.1**, CE Software, 515/221-1801, \$119. The hands-down winner for an easy way to automate repetitive tasks using macros. *Jun 96, p. 106*

★★★/6.9 **Tempo II Plus 3.0.9**, Affinity Microsystems, 303/442-4840, \$179.95. Powerful macro program suffers from undue complexity and an awkward interface. *Jun 96, p. 106*

★★★/6.8 **TouchBase Pro 4.2**, Now Software, 503/274-2800, \$69.95 (estimated). Slow, but offers up to 16 custom fields. *Jun 96, p. 106*

PRESENTATION TOOLS

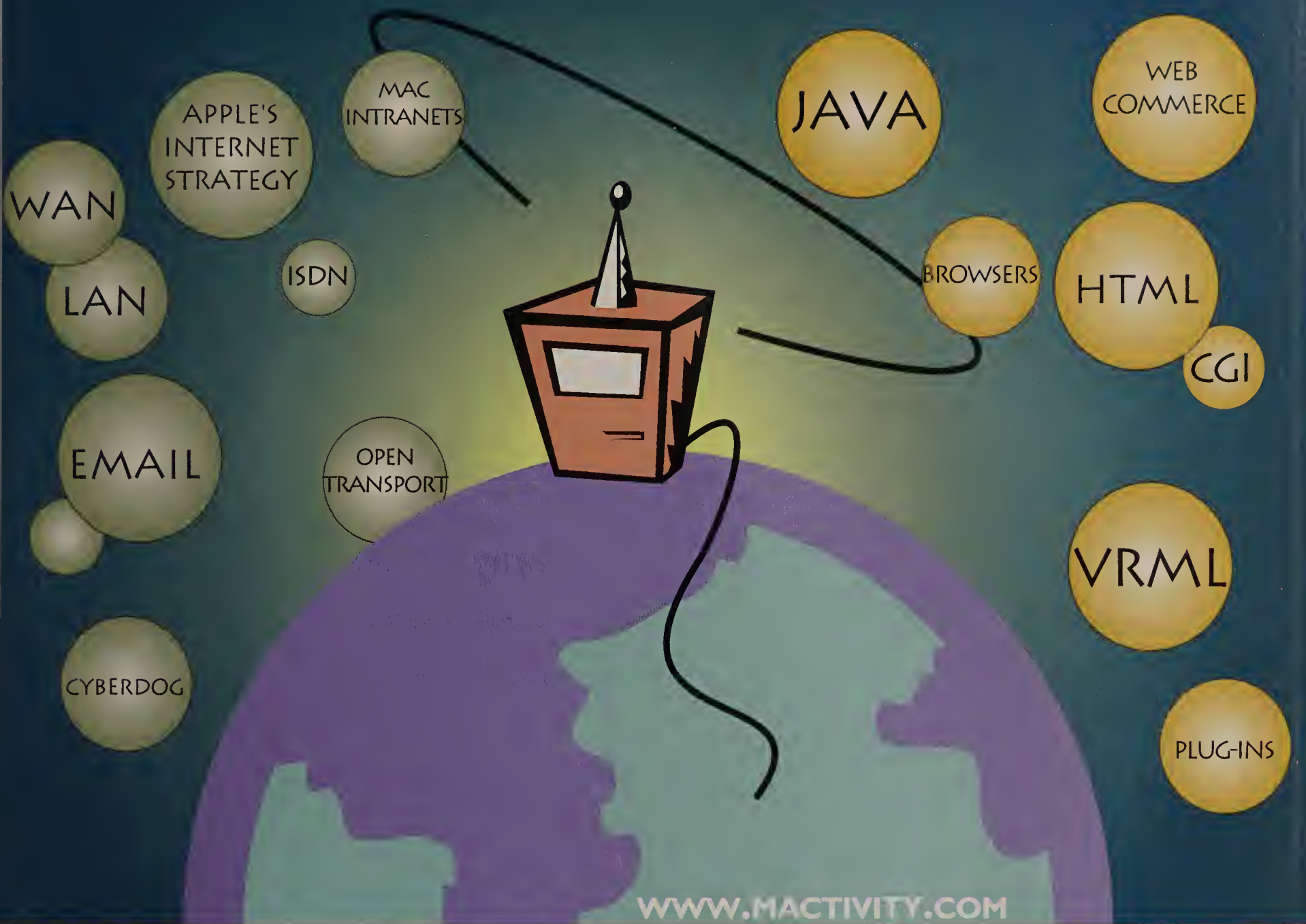
★★★★ **Adobe Premiere 4.0 (4.0.1)**, Adobe Systems, 415/961-4400, \$795. Advances far and above its competitors with professional-level features. *Dec 94, p. 54*

★★★★/7.1 **Astound 2.0**, Gold Disk, 408/982-0200, \$249. Presentation graphics with a multimedia twist. *Mar 96, p. 73*

★★★★/7.1 **Deck II 2.5**, Macromedia, 415/252-2000, \$399. Deck II widens its lead over other software-only multitrack programs. *Jun 96, p. 52*

★★★★/7.2 **Director 5.0**, Macromedia, 415/252-
continues

Where the Mac Meets the Internet



Mactivity Week: A week of tutorials, conference sessions and exhibits on Macintosh Internet and networking technologies.

Mactivity/Web (July 13-15) is the Macintosh Webmasters University, featuring technical sessions, tutorials, special events and hands-on learning in our Web Site Creation lab. Mactivity/Web is the event to learn *Java* and *VRML* on the Macintosh. Mactivity/Web also offers complete curriculums

for new Webmasters, graphic artists and Web entrepreneurs.

Mactivity'96 (July 15-18): The Macintosh Connectivity Conference is the place to see the latest in *Internet*, *networking*, *connectivity*, and *communications technology* for the Macintosh. In sessions, exhibits, and lectures, you find solutions for connecting your Macs to the Internet, building Macintosh intranets, network management and more.

Keynote Speakers

Apple's Internet Strategy:
You Asked for It, You Got It!

Larry Tesler
Vice President Internet Platforms
Apple Computer Inc.



How to Drive Your Competition Crazy

Guy Kawasaki
Apple Fellow



Paul's Picks: 3 Products
That Will Change Your Life in 1996

Paul Kent
President, Mactivity Inc.



The Coolest Products, the Best Education

July 13-18

San Jose Convention Center
San Jose, CA



Mactivity/Week

Exhibits



Conferences



Tutorials



Star Ratings

2000, \$1195. Multimedia authoring tool gets polish and a performance boost. *Jul 96, p. 52*

★★/3.5 **Mediagnügen 1.0.1**, Gnügen Software, 303/682-5380, \$29.98. Almost useless as a serious browser; lets you view and copy collections of images, but not organize and sort them. *Apr 96, p. 67*

★★★/6.9 **Microsoft PowerPoint 4**, Microsoft, 206/882-8080, \$295 (estimated). A solid, simple-to-use slide machine. *Jun 96, p. 98*

★★★/6.5 **Movie Cleaner Pro 1.1.1**, Terran Interactive, 408/353-8859, \$129. QuickTime-compression utility for crisp CD-ROM movies. *Apr 96, p. 69*

★★★/6.4 **Persuasion 3.0**, Adobe Systems, 206/470-7000, \$259 (estimated). Hard to use, but offers every presentation effect a pro could need. *Jun 96, p. 98*

★★/4.0 **ProView 1.1**, E-magine, 818/881-4757, \$69.95. Adequate tool for assembling an electronic portfolio or online manual. *Apr 96, p. 67*

★★★★/7.0 **SoundEdit 16 2.0**, Macromedia, 415/252-2000, \$399. The premier Mac sound-editing program just gets better. *Jun 96, p. 52*

★★/4.9 **STIP Professional 2.1**, MacVonk, 403/232-6545, \$1295. Multimedia authoring program is promising but flawed. *Apr 96, p. 75*

PROGRAMMING

★★★★/8.4 **CodeWarrior Gold 7**, Metrowerks, 512/305-0400, \$399. Key Power Mac compiler gets yet another face-lift. *Mar 96, p. 69*

★★★/6.9 **FutureBASIC II**, Staz Software, 601/255-7085, \$229. Complete friendly BASIC programming environment but no Power Mac support and some problems with numerics. *Jul 96, p. 81*

★★★★/8.0 **LS FORTRAN 1.1**, Fortner Research, 703/478-0181, \$695. FORTRAN rides again, running science programs on the Power Mac desktop. *Feb 96, p. 95*

★★★★/7.0 **Roaster DR1**, Natural Intelligence, 617/876-7680, \$299. Fast Java compiler, but some compatibility problems with Sun's Java standard. *Jul 96, p. 92*

★★★★/8.4 **Scripter 1.0.1**, Main Event Software, 202/298-9595, \$199. AppleScript development system offers serious debugging power. *Mar 96, p. 88*

★★★★/7.0 **Tools Plus 2.6**, Water's Edge Software, 416/219-5628. For Symantec's C/C++ and Pascal, \$149 each; for both, \$199; for CodeWarrior Bronze, \$199; for CodeWarrior Gold, \$249. Programmers' tool kit saves time. *Feb 96, p. 92*

★★★★/8.0 **VIP C 2.0**, Mainstay, 805/484-9400, \$495. Impressive update of slick coding tool. *Jul 96, p. 80*

★★★/6.6 **Visual C++ 4.0 Cross-Development Edition**, Microsoft, 800/426-9400, \$1999. Program in Windows, port effortlessly to the Mac. *Jul 96, p. 71*

UTILITIES

★★★/6.4 **ACT 2.5**, Symantec, 541/334-6054, \$249.95. This full-featured contact manager offers strong database features, but the interface is not easy to use. *Jun 96, p. 106*

★★★★/7.3 **Adobe Fetch 1.2**, Adobe Systems, 415/961-4400, \$149. Catalog graphics, text, and more for easy organization and retrieval. *Apr 96, p. 102*

★★★★/8.7 **Adobe Type Manager 3.9**, Adobe Systems, 415/961-4400, \$39.95. Accurately renders PostScript fonts at all sizes on screen and on any printer. *Apr 96, p. 102*

★★★★/7.3 **AliasZoo 2.0.5**, Blue Globe Software, shareware, \$15. Locates and fixes orphaned aliases and deletes unneeded ones. *Apr 96, p. 102*

★★★/6.9 **Anubis 2.54**, CharisMac Engineering, 916/885-4420, \$129.95. Disk formatter is reliable, easy to use. *May 96, p. 76*

★★★ **Arcserve for Macintosh 1.5**, Cheyenne Software, 516/484-5110, \$245 (5 users); \$495 (20 users). A good backup program for mixed-platform networks. *Jan 96, p. 63*

★★★★/9.3 **AreaCodeFinder 4.0**, John Calande, shareware, \$15. Identifies the location (and time zone) of a telephone area code and vice versa. *Apr 96, p. 102*

★★★/6.2 **At Ease 3.0**, Claris, 408/727-8227, \$46. This desktop alternative lets you share your Mac and worry less. *Feb 96, p. 81*

★★★★ **BeyondPress 1.0**, Astrobyte LC, 303/534-6344, \$595. QuarkXPress XTension is a great way to convert documents to Web pages. *Dec 95, p. 73*

★★★★/7.3 **Calc+ 2.0**, Abbott Systems, 914/747-4201, \$29. Simple calculator has a resizable, scrollable, editable, printable tape. *Apr 96, p. 102*

★★★/5.7 **Captivate 4.5**, Mainstay, 805/484-9400, \$89.95. Screen grabber fumbles but survives. *Jun 96, p. 74*

★★/3.8 **CD AutoCache 1.1**, CharisMac Engineering, 916/885-4420, \$79.95. Offers nice interface, but is buggy and provides minimal performance boost. *Jun 96, p. 62*

★★★/5.4 **CD-ROM ToolKit 2.0.1**, FWB Software, 415/325-4392, \$79. Offers attractive interface and reliable performance, but is RAM-hungry with minimal performance boost. *Jun 96, p. 62*

★★★★/7.6 **DeBabelizer 1.6.5**, Equilibrium Technologies, 415/332-4343, \$399. Endlessly talented and exasperating batch processor for bitmap graphics. *Apr 96, p. 102*

★★★★/8.6 **Desktop Dialer 1.4.2**, Sophisticated Circuits, 206/485-7979, \$75. Dials phone numbers appearing in any document. *Apr 96, p. 102*

★★★★/7.8 **DiskExpress II 2.20**, Alsoft, 713/353-4090, \$89.95. Intelligently defragments hard drives for optimum drive performance. *Apr 96, p. 102*

★★★/6.8 **DOS Mounter 95 1.0**, Software Architects, 206/487-0122, \$100. Windows-to-Mac file-transfer utility gets Win 95-savvy. *Mar 96, p. 74*

★★★★/8.1 **DragStrip 2.0**, Natural Intelligence, 617/876-7680, \$59.95. Feature-packed file launcher well worth the premium price. *Apr 96, p. 102*

★★★★/8.3 **Exodus 5.2.1**, White Pine Software, 603/886-9050, \$295. All around, the best for price/performance and X protocol support. *May 96, p. 108*. **Editors' Choice** for best X Window server software.

★★★/6.7 **GrabNet 2.0**, ForeFront Group, 713/961-1101, \$19.95. Bookmark manager for Netscape Navigator grabs Web graphics and text. *Apr 96, p. 102*

★★★★/7.6 **MacLinkPlus/Translators Pro 8.06ia**, DataViz, 203/268-0030, \$149. Excellent PC to Mac (or reverse) conversions for word processor, spreadsheet, or database documents. *Apr 96, p. 102*

★★/4.5 **MacOpener 1.0**, DataViz, 203/268-0030, \$75. Unintuitive Mac-to-Windows file-transfer utility. *Mar 96, p. 75*

★★★/6.7 **MacTools Pro 4.0**, Symantec, 541/334-6054, \$149.95. A respectable troubleshooting and data-recovery program for a reasonable price. *Jun 96, p. 106*

★★★/6.7 **MacX 1.5**, Apple Computer, 408/996-1010, \$295. Window server software offers acceptable performance, but it's not the leader in the category. *May 96, p. 108*

★★★/6.8 **Norton Utilities 3.2**, Symantec, 541/334-6054, \$149.95. An easy-to-use tool kit that works wonders on bad disks, corrupted files, and crashed hard drives. *Jun 96, p. 106*

★★★★/7.6 **Now Utilities 5.0 (5.0.2)**, Now Software, 503/274-2800, \$89 (estimated). This utility package streamlines your work with fast access to frequently used files, folders, and programs. *Jun 96, p. 106*

★★★★/7.1 **OmniPage Pro 6.0**, Caere, 408/395-7000, \$699. Flagged-text feature is indispensable and handles gray-scale graphics. *Jun 96, p. 54*

★★★/5.1 **OneClick 1.0.1**, Westcode, 619/487-9200, \$129. Promising button-based macro utility needs fine-tuning. *May 96, p. 67*

★★★★/7.1 **OptiMem RAM Charger 2.12**, Jump Development Group, 412/681-2692, \$129. Increases RAM available for applications by allocating it more efficiently. *Apr 96, p. 102*

★★★★/8.3 **PopupFolder 2.0.1**, Inline Software, 617/938-8088, \$79. Improves Finder navigation via ubiquitous pop-up menus. *Apr 96, p. 102*

★★★★ **QuickKeys 3.0**, CE Software, 515/221-1801, \$139. Easy-to-use shortcut manager. *Mar 94, p. 61*

★★★★/8.6 **RAM Doublor 1.6**, Connectix, 415/571-5100, \$99. Fools your Mac into thinking it has twice the RAM it actually does. *Apr 96, p. 102*

★★★★/8.9 **Retrospect 3.0; Retrospect Remote 3.0**, Dantz Development, 510/253-3000. Retrospect, \$249; Retrospect Remote (10 users), \$449. Backup programs now even more powerful, easier to use. *Apr 96, p. 61*

★★★/5.7 **SAM 4.0.8**, Symantec, 541/334-6054, \$69. SAM finds viruses, kills 'em. *Jul 96, p. 72*

★★★★/8.4 **SCSI Director Pro 4.0**, Transoft, 805/897-3350, \$99.95. Hard disk formatting and testing utility. *Feb 96, p. 86*

★★★★/8.9 **Speed Doublor 1.0.2**, Connectix, 415/571-5100, \$99. Connectix makes a Power Mac's 680X0 emulation feel native. *Feb 96, p. 56*

★★★★/7.9 **Stuffit Deluxe 3.5**, Aladdin Software, 408/761-6200, \$129.95. Macintosh, PC, and Internet file compression and decompression. *Apr 96, p. 102*

★★★★/8.9 **SuperATM 3.9**, Adobe Systems, 415/961-4400, \$69. ATM's PostScript font rendering plus intelligent substitution of missing fonts. *Apr 96, p. 102*

★★★★/7.0 **TextBridge Pro 3.0**, Xerox, 508/977-2000, \$349. Supports graphics, but does not flag unrecognized text. *Jun 96, p. 54*

★★★★/7.2 **Transverter Pro 3.0.1**, TechPool Software, 216/291-1922, \$399. Batch-process PostScript files or preview them to catch mistakes before printing. *Apr 96, p. 102*

★★★★/7.5 **Typelt4Me 4.5.1**, Riccardo Ettore, shareware, \$30. Automatically expands user-defined abbreviations in any application. *Apr 96, p. 102*

★★★★/8.5 **TypeTamer 1.1.1**, Impossible Software, 714/470-4800, \$59.95. Every conceivable Font menu improvement in one well-designed program. *Apr 96, p. 102*

★★★/6.5 **XoftWare for MacOS 3.0**, NetManage, 619/755-3998, \$295. X Window server software taken from Apple's MacX code, XoftWare turns in similar performance at a similar price. *May 96, p. 108*

★★★★/8.1 **XTen 6.0**, Tenon Intersystems, 805/963-6983, \$350. A speed demon, but be sure you're willing to be a Unix guru before choosing it. *continues*

REACH THE TOP OF THE DIGITAL MOUNTAIN



The Seventh Annual Macintosh Summit Conference

The highly successful, hands-on, educational digital imaging conference

TWO LOCATIONS

University of California, Santa Barbara: Aug. 14-17, 1996

University of Texas at Austin: Nov. 13-16, 1996

"MacSummit wins hands-down at pulling off the very best Macintosh design conference available, ever, anywhere. It is well-coordinated, chockfull of great speakers and topics, and plenty of hands-on training."



Hosted by
GUY KAWASAKI

"The Macintosh Summit is our best effort to bring together the finest instructors for a mind-expanding experience for Macintosh power users. No one leaves a MacSummit without vastly improving their Macintosh skills."



PROGRAM HIGHLIGHTS INCLUDE

Kai's Wild Card:

Kai Krause, the designer behind MetaTools, the visual computing software company

From PageMill to the Web: Russell Brown

Desktop Video Magic: George Jardine

Bryce 2: Harry St. Ours

Exploring the Strata-sphere: Steve Cooper

Painter 4: Andrew Hathaway

Industrial Strength Quark: David Blatner

Jaw Dropping 3D Web Pages: Adam Lavine

Photoshop Color Correction

and Calibration: Barry Haynes

Web Publishing: Neil Chase

Ray Dream Studio: Stephanie Arvisu

WHO SHOULD ATTEND

Professionals and decision-makers in graphic arts, publishing, multimedia, digital video, and photography

WHAT YOU'LL DO AND SEE

Over the four-day conference, attendees choose from eight all-day courses, eight Master Technique classes, 32 hands-on workshops and four keynote addresses. Scheduled keynote speakers include:

- **Guy Kawasaki**, Apple Fellow, recently selected as one of the top speakers in the U.S. by *Successful Speaker Magazine*
- **Kai Krause**, MetaTools' Senior Science and Design Officer, chosen one of the most influential people to watch in technology by *Newsweek Magazine*
- **Russell Brown**, Senior Art Director, Adobe Systems, Inc.

REGISTER TODAY!

SPACE WILL FILL UP FAST.

Voice 805-893-2811

Fax 805-893-4943

Email macsum@xlrn.ucsb.edu

Visit <http://www.xlrn.ucsb.edu>

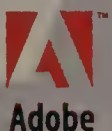
<http://www.metatools.com>

MetaTools™
The Visual Computing Software Company



UCSB EXTENSION

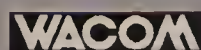
Macworld



Apple Computer, Inc.



UCSB Microcomputer Lab



Star Ratings

May 96, p. 108. **Editors' Choice** for best X Window server software.

VERTICAL MARKETS

- ★★★★/8.1 **Finale 3.5.1**, Coda Music Technology, 612/937-9611, \$545. Music-notation software goes Power Mac native. May 96, p. 81
- ★★★/6.9 **Quicken Family Lawyer 6.0b**, Parsons Technology, 319/395-9626, \$49. Helps you prepare 61 legal documents. Feb 96, p. 88

WRITING TOOLS

- ★★/3.0 **Indexicon 1.0**, Iconovex, 612/896-5100, \$129. Word 6 indexing tool has trouble identifying indexable terms. Apr 96, p. 77
- ★★★/6.7 **Microsoft Word 5.1**, Microsoft, 206/882-8080, \$320 (estimated). Fast, sleek, stable, and probably the most widely used Mac word processor on earth. Jun 96, p. 98
- ★★★/5.1 **Microsoft Word 6.0.1**, Microsoft, 206/882-8080, \$295 (estimated). Word 6, the most bloated word processor on earth, may be mandatory in big corporations. Jun 96, p. 98
- ★★★★/7.1 **Spelling Coach Professional 4.1**, Deneba Software, 305/596-5644, \$69.95. Adds dictionary and thesaurus to almost any application. Mar 96, p. 80
- ★★★★/7.4 **WordPerfect 3.5**, Corel, 613/728-8200, \$129 (estimated). In speed, interface efficiency, and Macintosh integration, WordPerfect beats all competitors. Jun 96, p. 98

hardware

INPUT DEVICES

- ★★/4.7 **Adjustable Keyboard**, Apple Computer, 408/996-1010, \$119. Adjustable split keyboard, but with small function keys. May 96, p. 98
- ★★★★ **ArtZ II**, Wacom Technology, 360/750-8882, \$389.99. Graphics tablet has unique stylus that erases as well as draws. Dec 95, p. 79
- ★★★/6.1 **BAT Personal Keyboard**, Infogrip, 805/652-0770, \$199. Chording device takes time to learn. May 96, p. 98
- ★★★/6.0 **Comfort Keyboard**, Health Care Keyboard, 414/536-2160, \$795. Expensive keyboard has separate sections that adjust independently. May 96, p. 98
- ★★★/5.8 **DataHand**, DataHand Systems, 602/860-8584, \$995. Costly, but requires much less arm and hand motion than other text-input devices. May 96, p. 98
- ★★★/6.0 **Desktop GlidePoint**, Alps Electric, 408/432-6000, \$99.95. Average touchpad whose biggest selling points are adjustable base and edge-detection. May 96, p. 98
- ★★★/6.0 **GlidePoint Desktop**, Cirque, 801/467-1100, \$99.95. Similar to Alps input device, but without detachable base. May 96, p. 98
- ★★★/5.3 **GyroPoint Desk 1.0**, Gyration, 408/255-3016, \$149. Mouse works on or off the desk. Jul 96, p. 76
- ★★★★/7.5 **Hitachi StudioPad**, Hitachi Digital Graph-

- ics, 408/747-0777, \$199.99. Graphics tablet for tight quarters. Apr 96, p. 70
- ★★★/5.2 **MacTrac Deluxe**, MicroSpeed, 510/490-1403, \$99. Good, basic trackball. May 96, p. 98
- ★★★/5.6 **Microsoft Natural Keyboard**, Microsoft, 800/426-9400, \$99.95. Inexpensive split keyboard with integrated wrist rest. May 96, p. 98
- ★★★/5.1 **Mouse Pen Mac 3.0**, Fellowes, 708/893-1600, \$39.99. Versatile, inexpensive penlike pointing device. May 96, p. 98
- ★★★/6.2 **Mouse-Trak**, Itac Systems, 214/494-3073, \$179. Well-built trackball with good ball dynamics. May 96, p. 98. **Editors' Choice** for best input devices.
- ★★★/5.0 **PenDirect ADB**, FTG Data Systems, 714/995-3900, \$398. PenDirect controls cursor on monitors, but with less precision than touch screen. May 96, p. 98
- ★★/4.4 **PointPad**, Hagiwara Sys-Com, 619/546-9989, \$89. Responds to direct pressure but awkward for dragging. May 96, p. 98
- ★★★/6.4 **RemotePoint**, Interlink Electronics, 805/484-1331, \$159.95. Wireless pointer works well for stand-up presentations. May 96, p. 98
- ★★★★/7.4 **Thinking Mouse 5.0**, Kensington Micro-ware, 415/572-2700, \$89.99. Four-button mouse with excellent software. May 96, p. 98. **Editors' Choice** for best input devices.
- ★★/4.3 **TouchPad**, Touché Technologies, 415/331-6622, \$59.95. This touchpad suffers from small buttons that can't be customized. May 96, p. 98
- ★★★/6.7 **Tru-Form**, Adesso, 213/294-4300, \$89-\$99. Good split keyboard design with integrated pointing device. May 96, p. 98

MISCELLANEOUS HARDWARE

- ★★/4.0 **Brother MFC 4000ML**, Brother, 908/356-8880, \$1000 plus \$89 for Mac interface. Fax-copier-printer's top-notch fax features are marred by touchy printing. May 96, p. 69
- ★★★/6.4 **Chinon ES-3000**, Chinon America, 310/533-0274, \$1095. Digital camera zooms in but with the high price doesn't measure up to Kodak Digital Camera 40's. Mar 96, p. 77
- ★★★ **Kodak Digital Camera 40**, Eastman Kodak, 716/726-7260, \$995. Digital camera can use 37mm lens but has some flaws. Jan 96, p. 59
- ★★★ **SoftBoard Model 205**, Microfield Graphics, 503/626-9393, \$2795. Electronic whiteboard is expensive but does the job. Jan 96, p. 71
- ★★★/5.9 **Sony PC Cam**, Sony Electronics, 941/731-4940, \$499. This desktop camera lacks AV strength; its competitor—VideoLabs' FlexCam—is simply the better camera. Apr 96, p. 77

MODEMS/NETWORK HARDWARE

- ★★★/6.3 **28.8 CruiseCard**, Megahertz, 801/320-7000, \$299. Another economical PC Card modem with good performance but low connect (reliability) rates. Jul 96, p. 141
- ★★★/6.9 **3Com Impact**, 3Com, 408/764-5000, \$549. This ISDN terminal adapter features easy-to-use installation software. May 96, p. 54
- ★★★★/7.7 **BitSurfr Pro**, Motorola, 205/430-8000, \$495. This ISDN terminal adapter offers a good value. May 96, p. 54
- ★★/4.8 **Communicard 28.8**, Dayna Communications, 801/269-7200, \$416, \$359 without cellular capability (estimated prices). Expensive PC Card modem, without digital line protection frequently found in similar cards. Jul 96, p. 141

- ★★/4.6 **Courier I-Modem with ISDN/V.34**, U.S. Robotics, 847/676-7010, \$895. This ISDN terminal adapter is expensive and lacks features. May 96, p. 54
- ★★★/6.0 **DF2814**, TDK Systems, 916/478-8421, \$379. Although boosted by low price and a 5-year warranty, the PC Card modem was bogged down by JPEG file transfer. Jul 96, p. 141
- ★★★/5.4 **EFM 288XJ**, Epson America, 310/782-0770, \$299. In our tests it's a fast PC Card modem, but with a low call-connect (reliability) score. Jul 96, p. 141
- ★★★/6.2 **MacClass 288 V.34**, Practical Peripherals, 770/840-9966, \$299. PC card modem has acceptable performance with a nice price and a lifetime warranty. Jul 96, p. 141
- ★★ **Manta 500EN; Starfish Ethernet Access Point**, Digital Ocean, 913/888-3380, Manta \$799; Starfish \$1850. Wireless-communications package is capable but much too expensive. Dec 95, p. 77
- ★★★/5.4 **Mobile Plus Macintosh**, Apex Data, 510/623-1231, \$307. PC card modem has a long, five-year warranty, but not much else to recommend it. Jul 96, p. 141
- ★★★/6.6 **Optima 288 V.34**, Hayes Microcomputer Products, 770/441-1617, \$319. PC card modem is an excellent performer with a great price and warranty. Jul 96, p. 141
- ★★★★/8.0 **PowerPort Platinum PC Card**, Global Village Communication, 408/523-1000, \$399. A complete, well-conceived mobile communications package for the Macintosh. Jul 96, p. 141. **Editors' Choice** for best PC card modems.
- ★★★/6.3 **QuickStream/3**, Sonic Systems, 408/736-1900, \$995; dial-out option \$249. Three-port remote-access server is priced right but has its limitations. Apr 96, p. 62
- ★★★/5.4 **SafeJack**, Angia Communications, 801/371-0488, \$299. Lifetime warranty for this PC card modem, but no bundled software. Jul 96, p. 141
- ★/2.6 **Smart One 2834VLXMac**, Best Data Products, 818/773-9600, \$269. This voice modem is not a smart choice. Jun 96, p. 76
- ★★/4.3 **SmartLink V.34 2834 PCA**, Archtek America, 818/912-9800, \$349. PC card modem has no Mac documentation. Jul 96, p. 141
- ★★★★/8.2 **TribeLink2**, Tribe Computer Works, 510/814-3900, \$1295; dial-out option \$200; additional PPP client licenses \$145 for 10 users to \$1495 for 500. Two-port remote-access server features Web-based administration. Apr 96, p. 62

PRINTERS

- ★★★/5.2 **1060E**, QMS, 334/633-4300, \$2399. Average quality, but supplies only available from QMS. Jun 96, p. 116
- ★★★/5.3 **1660E**, QMS, 334/633-4300, \$3999. Average quality printer that does not print envelopes. Jun 96, p. 116
- ★★★/5.6 **4520mp**, Xerox, 716/442-4028, \$4070. Slightly above average speed and quality, and comes with three input trays. Jun 96, p. 116
- ★★★/5.7 **Accel-a-Writer 8200**, Xanté, 334/476-8189, \$4495. Can handle large paper and offers halftone calibration, but output quality only average. Jun 96, p. 116
- ★★★/6.9 **Apple Color StyleWriter 1500**, Apple Computer, 408/996-1010, \$289. Low-cost color ink-jet offers a bargain-priced option for the casual user. Jul 96, p. 59
- ★★★★/7.0 **Apple Color StyleWriter 2200**, Apple Computer, 408/996-1010, \$419. The (almost) per-

fect printing companion for your PowerBook. *Apr 96, p. 133*

★★★★/7.2 **Apple Color StyleWriter 2400**, Apple Computer, 408/996-1010, \$429. Very good print quality at a reasonable price. *Apr 96, p. 133. Editors' Choice* for best midrange color ink-jet printers.

★★★★/7.5 **Apple Color StyleWriter 2500**, Apple Computer, 408/996-1010, \$389. Color ink-jet has quality and speed that small-office users will find valuable. *Jul 96, p. 59*

★★★/6.2 **Canon BJC-210**, Canon Computer Systems, 714/438-3000, \$299. Small footprint and low price, but only an average performer. *Apr 96, p. 133*

★★★★/7.1 **Canon BJC-4100**, Canon Computer Systems, 714/438-3000, \$399. Excellent print quality and can be used with a PC. *Apr 96, p. 133. Editors' Choice* for best midrange color ink-jet printers.

★★★★/7.2 **Epson Stylus Pro**, Epson America, 310/782-0770, \$999. Top-notch 720-dpi output, sprightly performance; a bargain alternative to dye-sub printers. *Apr 96, p. 133. Editors' Choice* for best high-end color ink-jet printers.

★★★★ **Fargo FotoFun**, Fargo Electronics, 612/941-9470, \$399.95. Dye-sublimation printer produces good output at a reasonable price. *Jan 96, p. 61*

★★/3.9 **FS-1600A**, Kyocera, 908/560-3400, \$2495. This inexpensive printer is slow and offers poor print quality. *Jun 96, p. 116*

★★/4.1 **FS-3600A**, Kyocera, 908/560-3400, \$4278. Good paper-handling options, but slow for graphics and offers poor print quality. *Jun 96, p. 116*

★★★/5.1 **HP Color LaserJet 5M**, Hewlett-Packard, 800/752-0900, \$9195. HP loses on all counts to the Tektronix Phaser 550. *Jun 96, p. 51*

★★★/5.4 **HP CopyJet M**, Hewlett-Packard, 800/752-0900, \$3649. Color copier and ink-jet printer in a single unit. *Feb 96, p. 77*

★★★/6.3 **HP DeskWriter 660C**, Hewlett-Packard, 208/323-2551, \$499. Poor color accuracy, blocky text and slow print speeds; easily networked. *Apr 96, p. 133*

★★★/5.2 **HP LaserJet 4M Plus**, Hewlett-Packard, 408/246-4300, \$2479. Good print quality, but below average speed. *Jun 96, p. 116*

★★★/6.0 **HP LaserJet 4MV**, Hewlett-Packard, 408/246-4300, \$3459. Strong tabloid size printer with good speed and adequate print quality. *Jun 96, p. 116*

★★★/5.9 **HP LaserJet 5M**, Hewlett-Packard, 408/246-4300, \$2229. A good workgroup printer gets better. *Jul 96, p. 56*

★★★/6.5 **HP LaserJet 5Si MX**, Hewlett-Packard, 408/246-4300, \$4899. Pricy, but offers top speed and quality. *Jun 96, p. 116. Editors' Choice* for best workgroup printers.

★★★★ **LaserWriter 4/600 PS**, Apple Computer, 408/996-1010, \$929. Compact printer produces great-looking 600-dpi output. *Dec 95, p. 60*

★★★/5.7 **LaserWriter 16/600 PS**, Apple Computer, 408/996-1010, \$1950 (estimated). Good performance at a modest price, but lacks some convenience features. *Jun 96, p. 116*

★★/3.3 **microLaser PowerPro/12**, Texas Instruments, 817/774-6000, \$1998. Inexpensive, but offers poor output quality and very slow Photoshop printing. *Jun 96, p. 116*

★★★/5.8 **Optra Lx+**, Lexmark, 606/232-2000, \$3249. Good print quality and paper handling are offset by slow speed for graphics. *Jun 96, p. 116*

★★★★/7.9 **Tektronix Phaser 550**, Tektronix, 503/682-7377, \$6995. The Phaser 550 beats HP Color LaserJet 5M on speed, resolution, and price. *Jun 96, p. 51*

★★★/5.3 **Typhoon 16**, Dataproducts, 805/578-4000, \$3699. Solid printer, especially for mixed-platform environment; average output quality. *Jun 96, p. 116*

★★★ **Typhoon 8**, Dataproducts, 818/887-8000, \$3100 (600 dpi, 4MB of RAM); \$5199 (1200 dpi, 36MB of RAM). Workgroup printer offers top-notch 1200-dpi output but is a bit pricey. *Dec 95, p. 64*

★★ **Xerox 4510ps**, Xerox, 800/349-3769, \$1745. Printer has neither the performance nor the quality to justify its price. *Dec 95, p. 68*

SCANNERS

★★★/5.1 **Apple Color OneScanner 600/27**, Apple Computer, 408/996-1010, \$629. New version of the Color OneScanner has little to offer. *Jul 96, p. 54*

★★/3.3 **ArtiScan Z1-600**, Tamarack, 714/744-3979, \$649. The ArtiScan Z1-600's poor software, manual, and scanning performance make it hard for us to recommend it, even at its low price. So we won't. *Mar 96, p. 118*

★★/3.7 **Biz Card Manager**, Electronic Document Technology, 408/733-7309, \$369. Fast card scanner but more expensive, no automatic scanning or data transfer to contact managers, and makes errors. *Apr 96, p. 64*

★★/3.7 **Biz Card Reader**, Umax Technologies, 510/651-8883, \$245. Exports automatically scanned data to contact managers, but uses a nonstandard SCSI connector and has no on/off switch. *Apr 96, p. 64*

★★/3.3 **Color OneScanner**, Apple Computer, 408/996-1010, \$859. The Color OneScanner's anemic software bundle and lackluster performance would make it an unexceptional offer even if reasonably priced. *Mar 96, p. 118*

★★/3.1 **CS-300**, Ricoh, 408/954-5326, \$599. The CS-300 scanner has one thing going for it: it's dirt cheap. Unfortunately, with performance, software, and documentation this weak, it's still overpriced. *Mar 96, p. 118*

★ **Digital Fotovix IIIS-D**, Tamron Industries, 516/484-8880, \$2299. Video slide scanner's image quality doesn't measure up to the competition. *Jan 96, p. 67*

★★★/5.4 **EasyPhoto Reader**, Storm Software, 415/691-6600, \$259. Small-format photo scanner has its limits. *May 96, p. 66*

★★★★/7.2 **ES-1200C**, Epson, 310/782-0770, \$1299. The ES-1200C scanner has great image quality, respectable speed, and good software. *Mar 96, p. 118. Editors' Choice* for best midrange scanners.

★★★★/7.1 **Gemini D-16**, Umax, 510/651-4000, \$1895-\$1995. Both a 400-dpi and 800-dpi scanner, depending on the scanning area, but for several hundred dollars above its competitors, you'd better need that extra resolution. *Mar 96, p. 118*

★★★/6.1 **HP ScanJet 4c**, Hewlett-Packard, 408/246-4300, \$1175. The HP ScanJet 4c is a respectable performer in all categories, though not exceptional. Limited software is its greatest weakness. *Mar 96, p. 118*

★★★/6.3 **HP ScanJet 4p**, Hewlett-Packard, 408/246-4300, \$615. High price and slow scan times make the ScanJet 4p scanner a mediocre choice. *Jul 96, p. 54*

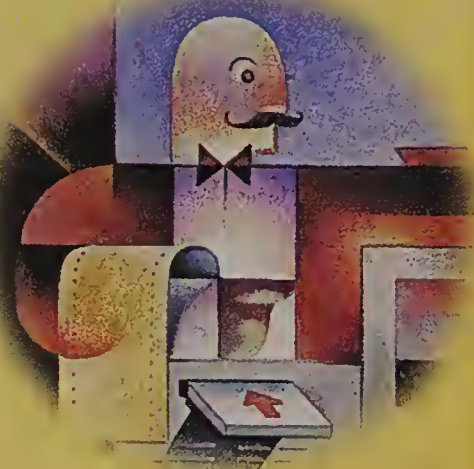
★★/3.8 **IX-4015**, Canon, 714/438-3000, \$799. Boasts desk-space economy and an exceptional warranty, but its performance and software bundle are mediocre. *Mar 96, p. 118*

★★★/6.9 **Mac IRISPen**, Image Recognition Integrated Systems, 407/395-7831, \$299. Portable, accurate pen OCR scanner. *Apr 96, p. 75*

continues

Apple turned to Xinet...

for a
UNIX
AppleShare
Server
Solution.



When one of their most critical OS development groups needed a fast and reliable AppleShare server, Apple turned to the time-tested leader—Xinet. Xinet has been producing robust AppleTalk products for UNIX since 1985.

K-AShare®/K-FS®

Scalable, transparent UNIX/Macintosh file sharing software.

K-Spool®

UNIX print spooling software for Macintoshes.

XINET®

2560 Ninth Street, Suite 312
Berkeley, CA 94710
Tel: 510.845.0555
Fax: 510.644.2680
e-mail: world@xinet.com
http://www.xinet.com

Circle 97 on reader service card

Star Ratings

- ★★★/6.6 **PageOffice**, Umax Technologies, 510/651-4000, \$349. Personal page scanner shortchanges Mac users. *Jun 96, p. 58*
- ★★★★/9.6 **PaperPort Vx**, Visioneer, 415/493-9599, \$369. Desktop document scanner just gets better. *Mar 96, p. 82*
- ★★/4.0 **Paragon 1200SP**, Mustek, 714/250-8855, \$899-\$1000. The Paragon 1200SP is a disappointment, from its performance to its bare-bones manual. Proof that a 600-dpi, 30-bit scanner for \$899 isn't a bargain. *Mar 96, p. 118*
- ★★★/5.0 **ScanMaker IIsp**, Microtek, 310/297-5000, \$499-\$699 (street). The ScanMaker IIsp is a shaky performer at best, especially when it comes to capturing highlight detail (it doesn't), but it's an option for the bargain hunter. *Mar 96, p. 118*
- ★★★/5.8 **ScanTouch AX-1200**, Nikon, 516/547-4355, \$1720. The ScanTouch AX-1200 is a solid performer, but at this price it should be closer to stunning. *Mar 96, p. 118*
- ★★★/5.6 **Silverscanner III**, La Cie, 503/520-9000, \$1499-\$1699. The Silverscanner III is a good performer in many respects, but its poor color accuracy and high price place it behind the Epson ES-1200C on which it's based. *Mar 96, p. 118*
- ★★★/5.9 **StudioScan IIsi**, Agfa, 508/658-5600, \$900 (street). The StudioScan IIsi gets good performance from its 30-bit, 400-dpi engine. Agfa's software is powerful and flexible, but could be easier to use.

Mar 96, p. 118

- ★★★★/8.4 **Umax Vista-S6E**, Umax Technologies, 510/651-4000, \$445. Despite its low price, the Vista-S6E is a clear best buy for anyone seeking a quality desktop scanner. *Jul 96, p. 54*
- ★★/3.8 **VIP Scan**, La Cie, 503/520-9000, \$199. Scans automatically to contact manager; includes Now Contact; uses nonstandard SCSI connector. *Apr 96, p. 64*

SPEAKERS

- ★★★★/8.8 **Acoustimass**, Bose, 508/879-7330, \$699. Full, rich, natural sound; treble slightly rolled off but clean. *Mar 96, p. 157*. **Editors' Choice** for best three-piece speakers.
- ★★★★/7.1 **ACS 52**, Altec Lansing, 717/296-2818, \$128. Clean, reasonably solid presentation; crisp highs; powerful bass for such a small design. *Mar 96, p. 157*
- ★★★★/7.1 **AMX-16**, Radio Shack, 817/390-3300, \$120 (street). Clean, reasonably crisp, slightly bright, decent bass, somewhat lacking in low-end heft. *Mar 96, p. 157*
- ★★★/6.8 **AppleDesign Powered Speakers**, Apple Computer, 408/996-1010, \$179. Clean, reasonably solid presentation. Bass is good but doesn't shake the foundations. *Mar 96, p. 157*
- ★★/4.9 **AV270 Powered Speakers**, Advent, 708/317-3700, \$179. Clean and smooth. Somewhat tinny quality to midrange and highs. *Mar 96, p. 157*
- ★★★/6.2 **AV622 Powered Speakers**, Advent, 708/317-3700, \$299. Clean and smooth, with somewhat lightweight character. Slight treble emphasis. Bass

has reasonable weight and impact. *Mar 96, p. 157*

- ★★★/5.2 **J-688AV**, Jazz, 818/336-2689, \$149. Reasonably smooth sound, noticeably rolled-off high end, slightly harsh midrange becomes a bit fatiguing over a long listening session. *Mar 96, p. 157*
- ★★/4.7 **J-902**, Jazz, 818/336-2689, \$150. Clear reproduction, with moderate bass emphasis and overemphasized treble. Generally thin sonic character because of the high-frequency emphasis. *Mar 96, p. 157*
- ★★★/5.8 **JPS 45**, Jensen, 708/317-3700, \$149. Clean, reasonably crisp, slightly bright; an almost sandpaper affect on cymbals; adequate bass, somewhat lacking in low-end heft. *Mar 96, p. 157*
- ★★/3.5 **Labtec LCS-3210**, Labtec, 360/896-2000, \$119 (street). Decent, slightly boomy bass, harsh midrange, rolled-off treble. Sound gets harsher when played at loud volumes. *Mar 96, p. 157*
- ★★★/6.2 **MA-12CP**, Roland, 213/685-5141, \$319. Relatively warm, well-balanced sound; slightly lightweight bass. Tends to sound harsh when played at normal volume levels. *Mar 96, p. 157*
- ★★★★/7.8 **MediaMate**, Bose, 508/879-7330, \$339. Full, warm, rich, natural sound. Amazingly robust for such a small speaker. *Mar 96, p. 157*. **Editors' Choice** for best desktop speakers.
- ★★★/6.6 **MLi-95**, Midi Land, 909/592-1168, \$120. Surprisingly good sound for the money. Clean, reasonably clear; fine musical details a wee bit indistinct, good voice reproduction, adequate bass. *Mar 96, p. 157*
- ★★★★/7.5 **MMS 557**, Audio-Technica, 216/686-2600, \$150. Relatively clean, slightly bright, crisp sound. Surprisingly robust bass for a small box.

Some people
donate money
to keep
the air clean.

Jeff Angus
wrote 2000 lines
of code.

Jeff Angus has regularly donated money to the Natural Resources Defense Council. Now he also supports them in a different and maybe even more valuable way. By donating his skills to modify a dBASE program that generates customized reports about toxic substances.



If you'd like to put your own special skills to good use, call 1-800-659-3579. And we'll match you with a local non-profit organization whose needs are compatible with your area of expertise. Call us now, and we'll show you a great way to make a real difference in the world. By doing what you do best.

CompuMentor®

People helping computers help people.

89 Stillman Street, San Francisco, CA 94107

Mar 96, p. 157

★★★★/7.9 **SoundWorks**, Cambridge SoundWorks, 617/332-5936, \$220. Clean, well-balanced sound, slight upper midrange emphasis, good bass. Mar 96, p. 157. **Editors' Choice** for best low-end three-piece speakers.

★★★★/5.7 **SurroundSound ACS 500**, Altec Lansing, 717/296-2818, \$450. Robust sound, slightly smeared highs, and slight harshness when played at loud volume. Bass is powerful, but a bit boomy. Mar 96, p. 157

★★/3.7 **SW150**, Koss, 414/964-5000, \$180. Weak bass, harsh midrange, rolled-off treble. No saving graces. Mar 96, p. 157

★★★★/6.4 **TC1490-7SUB**, Multimedia Labs, 410/429-4300, \$249. Clean sound and thin balance; adjusting subwoofer output just makes bass boom, but bass is always lightweight. Mar 96, p. 157

★★★★/6.4 **YST-S51010**, Yamaha, 714/522-9240, \$350. Relatively warm, well-balanced sound. Tends to sound harsh when played at loud volume levels. Mar 96, p. 157

SYSTEMS/STORAGE

★★★★/5.1 **50 1GQ Series**, Liberty Systems, 408/983-1127, \$699. Only its compact size and speed recommend this 1.1GB drive. Jun 96, p. 153

★★★★/5.4 **50 2.1GQ Series**, Liberty Systems, 408/983-1127, \$1099. 2.1GB drive offers good speed, good price, skimpy manual. Jun 96, p. 153

★★★★/6.0 **Advantage 2000**, MicroNet Technology, 714/453-6100, \$1080. 2.1GB drive is a top performer with a too-short warranty. Jun 96, p. 153

★★★★/6.3 **Apple MessagePad 120**, Apple Computer, 408/996-1010, \$699. Good software support and handwriting recognition help make this the best PDA. Jul 96, p. 102

★★★★/6.0 **APS MS 2.0**, APS Technologies, 816/483-1600, \$800. 2.1GB drive's good performance is enhanced by an excellent manual and software bundle. Jun 96, p. 153

★★★★/6.4 **Blue Storm 2000**, Microtech, 203/468-6223, \$2882. Expensive, but 2.4GB drive's strong performance and stackability help offset that. Jun 96, p. 153

★★★★/5.5 **DCM 1200**, Direct Connections, 612/937-6283, \$322. A decent performer, this 1.2GB drive offers a five-year warranty and a low price. Jun 96, p. 153

★★/3.6 **DCM 2400**, Direct Connections, 612/937-6283, \$685. A slow performer, this 2.4GB drive also has ungainly ergonomics. Jun 96, p. 153

★★★★ **EZ135**, SyQuest Technology, 510/226-4000, \$249. Removable drive is fast and comes with a fine selection of bundled software. Dec 95, p. 58

★★★★/7.0 **Genesis MP 528**, DayStar Digital, 707/967-2077, \$9999. If you do extensive Photoshop work every day, and the Photoshop tasks you do benefit from the four CPUs, this system is worth its high price. Jul 96, p. 84

★★★★/6.7 **Hammer PE 2000**, FWB, 415/325-4392, \$1079. For the fastest performance, the Hammer PE 2000 is the choice. Jun 96, p. 153. **Editors' Choice** for best 1.0GB to 2.5GB hard drive.

★★★★/8.3 **Jaz Drive**, Iomega, 801/778-1000, \$599.95. Iomega thinks big with Zip's new sibling. Jun 96, p. 48

★★★★/5.2 **Magic Seagate Barracuda**, MacProducts USA, 512/892-4070, \$1006. More expensive than MacProducts' almost-as-fast, same-capacity (2.1GB) Hawk drive. Jun 96, p. 153

★★★★/5.6 **Magic Seagate Hawk**, MacProducts USA,

512/892-4070, \$858. Pass-through power connector and a nice warranty distinguish this 2.1GB drive. Jun 96, p. 153

★★/4.2 **Magic Link PIC-2000**, Sony, 408/432-1600, \$899. PDA has readable screen, with a built-in modem and great communications software; but too large, and few software titles available. Jul 96, p. 102

★★★★/5.3 **MiniPak 2100**, Optima Technology, 714/476-0515, \$975. 2.1GB drive is inexpensive but only a poor-to-average performer. Jun 96, p. 153

★★★★/7.0 **PDC 2400**, ProDirect, 612/941-1805, \$800. 2.4GB drive is tops for speed, value, and design. Jun 96, p. 153. **Editors' Choice** for best 1.0GB to 2.5GB hard drive.

★★★★/6.2 **PDI 1200**, ProDirect, 612/941-1805, \$335. Average speed undermines 1.2GB drive's excellent design. Jun 96, p. 153

★★★★/5.6 **Performa 5125CD**, Apple Computer, 408/996-1010, \$2300. The all-in-one design is appealing, but the performance is just so-so. Feb 96, p. 96

★★★★/5.1 **PocketHammer 2050**, FWB, 415/325-4392, \$1479. Merely moderate performer, 2.1GB drive has hard-to-adjust settings. Jun 96, p. 153

★★★★/5.8 **PowerBook 5300**, Apple Computer, 408/996-1010, \$2300. A gray-scale screen and middling performance make this just an acceptable notebook. Feb 96, p. 96

★★★★/5.9 **PowerBook 5300c**, Apple Computer, 408/996-1010, \$4500. A great color screen and strong expandability balance with so-so performance. Feb 96, p. 58. **Editors' Choice** for best portable Mac.

★★★★/5.9 **PowerBook 5300cs**, Apple Computer, 408/996-1010, \$3600. Good expansion, so-so speed, and a decent color screen make this fine for short-term use. Feb 96, p. 96

★★★★/5.9 **PowerBook Duo 2300c**, Apple Computer, 408/996-1010, \$3699 (8MB of RAM, 750MB hard drive); \$4699 (20MB of RAM, 1.1GB hard drive, 14.4-Kbps fax modem). This new Duo packs a lot of power into a little package. Apr 96, p. 58

★★★★/6.3 **PowerCenter 120**, Power Computing, 512/388-6886, \$1995. The cheapest fast desktop Mac outdoes Apple's Power Mac 7500/120 in terms of price, and is near enough in speed. Jul 96, p. 84

★★★★/5.9 **PowerCenter 120 Low Profile**, Power Computing, 512/388-6886, \$1895. This system's low-profile case limits internal-drive expansion, and it doesn't really save space except maybe in a cubicle with low shelves, so go for the full-size PowerCenter desktops. Jul 96, p. 84

★★★★/7.1 **PowerCenter 132**, Power Computing, 512/388-6886, \$2495. A little cheaper and a little slower than the PowerCenter 150; this is the desktop Mac to get if you want to shave some costs. Jul 96, p. 84

★★★★/7.3 **PowerCenter 150**, Power Computing, 512/388-6886, \$2995. Until Apple puts more muscle in the Power Mac 7500, this is the best desktop choice—and it's inexpensive. Jul 96, p. 84. **Editors' Choice** for best business user's system.

★★/4.6 **Power Macintosh 7200/120**, Apple Computer, 408/996-1010, \$2299. Apple should discontinue this line. It's not that cheap, and to upgrade it later to a 7600 will cost another \$2000—way too much. Jul 96, p. 84

★★★★/5.8 **Power Macintosh 7600/120**, Apple Computer, 408/996-1010, \$2999. Apple's new flagship desktop Mac doesn't go far enough in performance. While the price hasn't changed, it's now outclassed by Power Computing's lineup. Jul 96, p. 84

★★★★/5.8 **Power Macintosh 8500/132**, Apple Com-

continues

Laser Tech Color turned to Xinet...

for an
Integrated
Prepress Server
Solution.



When one of the nation's largest prepress houses was looking for a reliable OPI server, they turned to the company that is at the forefront of AppleTalk technology—Xinet.

FullPress, the robust solution for an efficient prepress workflow, dynamically binds high- and low-res images so that placement images are always up-to-date.

Along with complete queue management and optimized PostScript, FullPress is the easiest to use, fastest OPI server on the market.

FullPress™
Reliable OPI server, file sharing
and print spooling software.

XINET®

2560 Ninth Street, Suite 312
Berkeley, CA 94710
Tel: 510.845.0555
Fax: 510.644.2680
e-mail: world@xinet.com
http://www.xinet.com

Have a Nice Day.



Plan Ahead!

Register Online for Seybold San Francisco

(www.seyboldseminars.com)

Coming soon... Visit seyboldseminars.com for all the information you'll ever need as a publishing professional, including:

- Rich show content
- Breaking news
- Product Reviews
- World-wide show information
- The Seybold Buying Guide, the most comprehensive product buying tool available to the publishing community today!

Seybold San Francisco is the premiere publishing event for the digital electronic, graphic, printing, and internet/intranet publishing industries.

SEYBOLD
S E M I N A R S

The Web Site.

Where the Web Press Meets the World Wide Web

Macworld

Subscriber Courtesy Voucher

As a new subscriber, you are entitled to receive a full year of Macworld for 60% less than the annual cover price of \$59.40. **BONUS GIFT:** Our 2 exclusive David Pogue Premium Utilities Disks contain 14 of the most powerful, time-saving, fun-to-use utilities ever authored! Send for your 2 FREE Utilities disks now!



Please Check:

☐ 12 issues/\$24.00.
Bill me later.

Name _____
Company _____
Address _____
City, State, Zip _____
E-Mail _____

Savings Statement

Annual Cover Price
\$59.40

Regular Subscription Price
\$30.00

Your Special Rate
\$24.00

Bonus Gift
2 Utilities Disks

Allow 4 to 6 weeks for delivery. For Mexican and Canadian subscriptions, please add \$18 per year for shipping. Add \$70 annually for all other foreign countries.

4EKG8

**Rush my
FREE Premium
Utilities Disks!**



NO POSTAGE
NECESSARY
IF MAILED IN THE
UNITED STATES

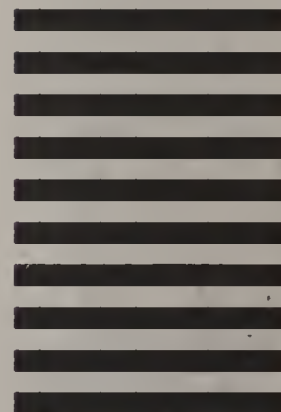
BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 1167 BOULDER, CO

POSTAGE WILL BE PAID BY ADDRESSEE

Macworld

SUBSCRIPTION DEPARTMENT
P.O. BOX 51666
BOULDER, CO 80323-1666



Star Ratings

puter, 408/996-1010, \$3899. For a moderate drop in performance, you can get a big price break on the 8500/120 versus the 8500/150, but it's still just for AV users. *Jul 96, p. 84*

★★★/6.0 **Power Macintosh 8500/150**, Apple Computer, 408/996-1010, \$4699. AV professionals will continue to like the 8500, despite its hard-to-upgrade design and high price. *Jul 96, p. 84*

★★★/5.6 **Power Macintosh 9500/150**, Apple Computer, 408/996-1010, \$4799. The real advantages of the pricey but fast 9500/150 are its six PCI slots. Otherwise, a PowerTower has better speed and a nicer price. *Jul 96, p. 84*

★★★/5.1 **PowerShop**, Adaptive Solutions, 503/690-1236, \$2000 (estimated). Worth considering if its few accelerated tasks are among those you perform regularly. *Jun 96, p. 87*

★★★★/7.1 **PowerTower 166**, Power Computing, 512/388-6886, \$3795. Comparable in performance to a Power Mac 8500/150, the PowerTower 166 is cheaper but lacks AV features. *Jul 96, p. 84*

★★★★/7.3 **PowerTower 180**, Power Computing, 512/388-6886, \$4195. The top Mac performer, this tower also offers a good price and sufficient expansion for most people, but suffers from a hard-to-upgrade design. *Jul 96, p. 84*. **Editors' Choice** for best power user's system.

★★★★/8.1 **PR2-16828W**, ProMax Technology, 714/727-3977, \$8890. Comparatively low price, can repartition with reconfiguring hardware. Has confusing installation guide for drives. *May 96, p. 57*

★★/4.2 **Psion Series 3a**, Psion, 508/371-0310, \$595. PDA has good software features, but its awkward L-shape when open is unstable on uneven surfaces. *Jul 96, p. 102*

★★★/5.9 **Q1080**, APS Technologies, 816/483-1600, \$350. 1.1GB drive is a slightly above-middle-of-the-road performer. *Jun 96, p. 153*

★★★/5.1 **SCSI PowerPlug II**, Hot Wire Technology, 203/761-0651, \$119.99. A fast way to swap SCSI devices. *Feb 96, p. 86*

★★★/6.5 **SledgeHammer 3500FMF PCI II**, FWB, 415/325-4392, \$5129. Software easy to use, but cables sometimes difficult to attach. *May 96, p. 57*

★★★/6.9 **SledgeHammer 7000FMF PCI II**, FWB, 415/325-4392, \$9439. Fastest array tested, but cables sometimes difficult to attach. *May 96, p. 57*

★★★ **SledgeHammer8000FT**, FWB, 415/325-4392, \$23,599. Level 5 RAID array provides constant access to your stored information. *Sep 95, p. 59*

★★★ **Sony Magic Link**, Sony, 800/571-7669, \$699.95. Using this PDA is a breeze, but it lacks applications. *Aug 95, p. 62*

★★/4.5 **SSW-1800**, MicroNet Technology, 714/453-6100, \$2185. 2.1GB drive is a slow performer all around. *Jun 96, p. 153*

★★★/5.8 **System 100**, Radius, 408/541-6100, \$10,500. Radius bundles its mediocre digital-video cards on a relabeled Power Mac 8100—that's no wise investment. *Feb 96, p. 96*

★★★/6.5 **Taurus AV4221**, Micropolis, 818/709-3300, \$1270. Stunning design, solid performance, and a five-year warranty make this 2GB drive shine. *Jun 96, p. 153*

★★/4.8 **Zaurus ZR-5000**, Sharp, 201/529-8200, \$499. PDA is easy to carry and offers decent graphics tools, but little supporting software, and no handwriting recognition is available. *Jul 96, p. 102*

VIDEO/DISPLAY

★★/4.2 **AlphaScan GLX**, Sampo Technology, 770/449-6220, \$1495. Low price fails to outweigh poor image quality. *Feb 96, p. 165*

★★★★/7.8 **ATI Xclaim GA**, ATI Technologies, 905/882-2600, \$449. Offers adequate video-display acceleration and superfast FreeHand previews at a low price. *Jun 96, p. 93*

★★/3.3 **Datashow AV 4500**, Sayett Technology, 716/624-1290, \$4875. Panel has inscrutable menus; lackluster video performance. *May 96, p. 139*

★★★/6.9 **Diamond Javelin Video 3400XL**, Diamond Multimedia, 408/325-7000, \$569. Offers decent video acceleration and enhanced QuickTime display, but no control panel and a missing 832-by-624-pixel setting. *Jun 96, p. 93*

★★★/5.5 **Diamond Pro 21TX**, Mitsubishi Electronics America, 714/220-2500, \$2199. Washed-out colors hold back an otherwise strong contender. *Feb 96, p. 165*

★★★★/7.5 **Eris 1.0**, RSI Systems, 612/896-3020, \$3995. Dedicated box is easy to install, but the system is expensive and you need to supply your own camera. *May 96, p. 82*. **Editors' Choice** for best desktop videoconferencing system.

★★/4.4 **FlexScan F2 21**, Nanao, 310/325-5202, \$2299. Blurry, dim image and too high a price. *Feb 96, p. 165*

★★★/6.8 **IMS TwinTurbo-128M**, Integrated Micro Solutions, 408/369-8282, \$699. Slight screen-refresh artifacts and image shifts when changing bit depth detract from good video acceleration speeds. *Jun 96, p. 93*

★★★/6.8 **Kodak Digital Science DC50 Zoom Camera**, Eastman Kodak, 716/724-4000, \$1000. Camera combines zoom and autofocus with good color and detail. *Jul 96, p. 57*

★★★★/7.1 **MagnaByte M3xv**, Telex, 612/884-4051, \$3995. Easy to use, good image quality, mid-range price. *May 96, p. 139*. **Editors' Choice** for best LCD projection panels.

★★★/5.2 **MagniView 488B**, Dukane Audiovisual Products, 708/584-2300, \$4995. Image quality is a notch below average in all categories. *May 96, p. 139*

★★/2.8 **Matrox MGA Millennium**, Matrox, 514/969-6320, \$649. Video-display acceleration is disabled when floating palettes overlap document windows—a major flaw. FreeHand preview performance isn't great, either. *Jun 96, p. 93*

★★★/6.8 **Meet-Me 1.0**, Sat Sagem, 408/446-8690, \$2995. Good audio and video, but more expensive than the Apple system it's based on. *May 96, p. 82*

★★/4.8 **Multigraph 445X**, Nokia Display Products, 415/943-4071, \$2775. Adequate image quality, but at too high a price. *Feb 96, p. 165*

★★★/6.2 **Multiple Scan 20 Display**, Apple Computer, 408/996-1010, \$2149. Not as vibrant as it could be, but good value. *Feb 96, p. 165*

★★★/5.9 **MultiscanTC**, Sony, 408/432-0190, \$3950. Special color-adjustment tools don't overcome mediocre performance. *Feb 96, p. 165*

★★★/6.8 **MultiSync M500**, NEC, 508/264-8000, \$599. Multimedia monitor has a top-notch picture and decent sound. *Jul 96, p. 69*

★★★★/7.3 **MultiSync XE21**, NEC Technologies, 508/264-8000, \$1899. Rich, bright images complemented by excellent controls. *Feb 96, p. 165*

★★★/5.8 **MultiView 21**, Radius, 408/541-5700, \$2149. Seductively rich colors, but too soft a focus. *Feb 96, p. 165*

★★★★/8.3 **Number Nine Imagine 128**, Number continues

HotWired turned to Xinet...

for a
Client/Server
Web Authoring
Solution.



When one of the hottest on-line publications needed a reliable way to put Macintosh files on their UNIX server, they chose Xinet. That's because our seamless UNIX/Macintosh networking software automatically translates between native Mac and UNIX file formats for HTML scripts.

K-AShare and K-FS, Xinet's transparent plug-and-play team, allows Mac users and UNIX servers to share files effortlessly. And, of course, we back them with impeccable customer service.

K-AShare®/K-FS®
Reliable client/server web
authoring tools.

XINET®

2560 Ninth Street, Suite 312
Berkeley, CA 94710
Tel: 510.845.0555
Fax: 510.644.2680
e-mail: world@xinet.com
http://www.xinet.com

Circle 99 on reader service card

Star Ratings

Nine Visual Technology, 617/674-0809, \$999. The fastest overall video acceleration of the PCI cards we reviewed, plus support for 1600-by-1200 resolution, but at a relatively high cost. *Jun 96, p. 93*

- ★★★/5.0 **Ovation 810**, Proxima, 619/457-5500, \$3295. A better value than Proxima's high-end Ovation 846C panel. *May 96, p. 139*
- ★★/4.7 **Ovation 846C**, Proxima, 619/457-5500, \$5995. Design and features outshine image quality of this projection panel. *May 96, p. 139*
- ★★★/5.0 **PanaSync/Pro C2192P**, Panasonic Communications & Systems, 201/348-7000, \$1999. Reasonable price fails to overcome weak image quality. *Feb 96, p. 165*
- ★★★/6.6 **Pivot 1700**, Portrait Display Labs, 510/227-2700, \$1099. Good image quality but doesn't automatically switch views when rotated. *Mar 96, p. 70*
- ★★★/5.4 **Polaview 3000**, Polaroid Electronic Imaging Systems, 617/386-2000, \$5295. Unremarkable overall image quality; above-average video. *May 96, p. 139*
- ★★/3.5 **PowerView 950V**, In Focus Systems, 503/685-8888, \$9499. Innovative concepts but substandard image quality; overpriced. *May 96, p. 139*
- ★★★★/8.6 **PressView 21 SR**, Radius, 408/541-6100, \$3999. The best professional-quality display gets better. *Feb 96, p. 62*
- ★★/4.3 **ProColor 1701**, Boxlight, 360/779-7901, \$6499. Panel has substandard image quality and hard-to-use controls. *May 96, p. 139*

- ★★★/5.0 **QuickDraw 3D Accelerator Card**, Apple Computer, 408/996-1010, \$400. Supports texture maps but only minor speed gains with major 3-D applications. *Apr 96, p. 60*
- ★★★ **QuickTake 150**, Apple Computer, 408/996-1010, \$739. Digital camera is easy to use and includes close-up lens. *Jan 96, p. 59*
- ★★★★/7.1 **QuickTime Conferencing Kit 1.0**, Apple Computer, 408/996-1010, \$2000. Good value, straightforward LAN- and ISDN-capable software, but no digitizer included and ISDN setup is complex. *May 96, p. 82*
- ★★ **Radius Telecast**, Radius, 408/541-6100, \$9995. QuickTime-based video editor has potential, but software is not yet mature. *Jan 96, p. 65*
- ★★/3.5 **Radius Thunder 30/1600**, Radius, 408/541-6100, \$1499. An incompatibility with FreeHand causes preview speeds to plummet, but otherwise this PCI video-display card offers solid performance and a nice control panel. *Jun 96, p. 93*
- ★★★★/7.2 **Rainbow 30/10**, Chisholm, 408/559-1111, \$4995. Panel is carefully designed for ease of use; a good value. *May 96, p. 139*. **Editors' Choice** for best LCD projection panels.
- ★★★★/7.3 **RasterOps SuperScan Mc 21**, NSA/Hitachi, 617/461-8300, \$2299. Top performance plus sensible, intuitive controls create a winning combination. *Feb 96, p. 165*. **Editors' Choice** for best two-page monitor.
- ★★★/6.5 **ShareVision Mac3000 1.0**, Creative Labs, 408/428-6600, \$1149. Easy to install with good sound quality, but small maximum frame size and poor synchronization are problems. *May 96, p. 82*
- ★★/4.0 **Sharp QA-2500**, Sharp, 201/529-8731,

\$9995. Panel offers overly complex image controls; expensive. *May 96, p. 139*

- ★★★/5.5 **SmartView 3600**, In Focus Systems, 503/685-8888, \$3799. A solid LCD performer and a good value. *May 96, p. 139*
- ★★/4.1 **SyncMaster 20GLs**, Samsung Electronics America, 201/691-6200, \$1599. Glare-catching, image-distorting tube and weak controls. *Feb 96, p. 165*
- ★★★/5.8 **ViewSonic 21PS**, ViewSonic, 909/869-7976, \$2095. Bright, vibrant, though not particularly sharp image. *Feb 96, p. 165*
- ★★★/5.9 **Vision Q3 LCD Panel**, Apollo Presentation Products, 516/467-8033, \$6750. Top image quality but difficult to use. *May 96, p. 139*
- ★★★/5.3 **VisionMaster Pro 21**, Iiyama North America, 215/957-6543, \$1995. Good image quality, but confusing controls. *Feb 96, p. 165*
- ★★★/5.2 **Visit Video 2.0 (2.1)**, Northern Telecom, 214/684-1000, \$2999. Good call management and supplies all hardware, but lacks H.320 support and has small on-screen frame size. *May 96, p. 82*
- ★★★/5.0 **VR-1000 3-D Stereoscopic LCD Projection Panel**, VRex, 914/345-8877, \$6995. The only choice for projecting 3-D images, though stereo 3-D images don't integrate well with standard PowerPoint or Persuasion slide shows. *May 96, p. 139*
- ★/1.9 **Yarc Screamer**, Yarc Systems, 805/499-9444, \$995. Supports texture maps but slower than using no board in some instances; chokes on simple models. *Apr 96, p. 60*
- ★★★/5.6 **Z215**, nView, 804/873-1354, \$5695. Good image quality, very sleek and compact. *May 96, p. 139* **m**

Little known Mac fact #31

Now you can take
files to and from
ClarisWorks 4.0
with **MacLinkPlus**.

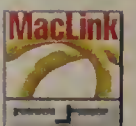
ClarisWorks 4

WORDPERFECT

MICROSOFT WORKS

MICROSOFT WORD

Ever try moving ClarisWorks 4.0 files into WordPerfect or Microsoft Works? How about the other way around? If you have, you know something generally gets lost along the way. Like formatting. And graphics. The latest version of MacLinkPlus, on the other hand, gets you there with everything intact—embedded graphics, spreadsheets, styles and more. So move files in and out of ClarisWorks 4.0. Or any of the other word processing, graphic, spreadsheet or database formats MacLinkPlus supports. Now the shortest distance between ClarisWorks 4.0 and other Mac or Windows applications is MacLinkPlus. For more information or to upgrade, call 1-800-780-1466 or visit our Web site at <http://www.dataviz.com/maclink2>.



DATAVIZ
The PC & Mac File Compatibility Specialists

Circle 79 on reader service card

Macworld

Advertiser Index

Say you saw it in Macworld. To purchase products advertised in this issue call the phone numbers below or use the reader service number for our Product Information Card located after the product index.

Page No.	Advertiser	Reader Svc. No.	Phone	Page No.	Advertiser	Reader Svc. No.	Phone	Page No.	Advertiser	Reader Svc. No.	Phone
76	Adam Software Inc.	37	800/408-2326	64	Hitachi NSA	74	800/441-4832	14	Orange Micro	33	714/779-2772
51	Adobe-Illustrator	252	800/521-1976								
65,67,69,71	Adobe-PostScript	251	800/521-1976	28	Image Club	50	800/397-9193	70	Polaroid	295	800/816-2611
85	Agfa	158	800/685-4271	63	Inspiration Software	—	800/877-4292	12	Portrait Display Lab	89	800/858-7744
178,179	Alliance Peripheral Systems	62	800/874-1428	90,91	Iomega	76	888/2IOMEGA	2,3	Power Computing Corporation	161	800/410-7693
8	Alsoft	140	800/257-6381					6,7	Power Computing Corporation	151	800/410-7693
122,123	American Power Conversion	72	800/788-2208	180,181	J&R Computerworld	282	800/221-8180	199	ProDirect	135	800/524-9952
30-32	Apple Computer	—	—								
66	Ashlar, Inc.	40	800/206-4075	8C	Kensington Microware Ltd.	1	800/535-4242	79	QMS	288	800/392-7559
121	Avery International	17	888/283-7972	16,17	Kingston Technology	201	800/435-0677				
203	BottomLine Distribution/ DGR Technologies	63	800/990-5798	193	L.A.Trade	—	800/433-3726	162	Seybold Online	—	—
				169-171	LaCie	52	800/999-1457	146	Seybold San Francisco	—	800/488-2883
				124	Luckman Interactive	65	800/711-2676	61	SoftArc, Inc.	—	—
11	Caere Corporation	69	800/535-SCAN					43	Specular International	41	800/433-7732
81	Casady and Greene In	58	800/359-4920	188,189	Mac Bargains	70	800/619-9091	127	Spry/Compuserve Internet Division	84	800/SPRYNET
89	Casio	—	—	174,175	Mac Zone	71	800/436-0606	87	SPSS INC.	85	800/457-8287
72	Claris- Filemaker	—	—	155	MacActivity	—	800/298-7978	83	STF Technologies	80	800/880-7622
23	Claris-Office Mail	—	—	176,177	MacConnection	145	800/800-3333	75	Symantec Corporation- Norton Utilities	—	800/695-0679
190,191	ClubMac	96	800/CLUB-MAC	194,195	MacMall	131	800/222-2808	73	Symantec Corporation- Suitcase	—	800/695-0679
183-185	Computer Discount Warehouse	2	800/861-4CDW	192	MacMarket	258	800/223-4622				
80	Connectix - RAM Doubler	192	800/839-3629	142	Macromedia	36	800/287-7141	201	Texas Instruments	266	800/527-3500
82	Connectix - Speed Doubler	193	800/839-3629	157	MacSummit	—	805/893-2811	10	Toyota Motor Sales	39	800/GO-TOYOTA
84	Connectix - QuickCAM	191	800/839-3629	68	Mactemps, Inc.	60	800/MACTEMPS	78	Trinity Works	118	800/278-4944
18	Corel Corporation	78	800/836-3729	196,197	MacWarehouse	150	800/255-6227				
172,173	CRA Systems Inc.	20	800/375-9000	153	Macworld Depot	—	800/257-0374	15	Umax Computer	200	800/859-2728
				150	Macworld Expo	—	800/645-EXPO				
				198	MegaHaus	245	800/786-1184	34	VideoLabs, Inc.	9	—
48	Dantz Development	26	800/225-4880	20	MetaTools, Inc.	4	800/472-9025	134	ViewSonic	59	800/888-8583
164	Dataviz	79	800/780-1466	29	MetaTools, Inc.	5	800/472-9025	57,58	Visioneer	18	800/787-7007
200	DC Pro	57	800/522-7835	36	Microfield Graphics	—	800/334-4922	12	VST Power Systems	73	508/287-4600
47	Delorme Mapping	—	—	10	MicroMat	77	800/829-6227				
22	Deneba Software	—	800/733-6322	IFC,1	Microsoft Corporation	—	800/531-6748	202	Westwood Computers	101	800/761-1999
182	DigiCore	269	800/858-4622	62	Microspot USA, Inc.	3	800/622-7568				
				109	Mitsubishi Electronics America	261	800/937-2094	13	Xante Corporation	112	800/926-8839
74	EarthLink Network	8	800/395-8425					159	Xinet, Inc.	97	510/845-0555
243	Educorp	157	800/843-9497	21	NEC Technologies	14	800/NEC-INFO	161	Xinet, Inc.	98	510/845-0555
9	Epson America	—	800/BUY-EPSON	110,111	NEC Technologies	19	800/NEC-INFO	163	Xinet, Inc.	99	510/845-0555
24,25	Epson America	—	800/BUY-EPSON	IBC	NEC Technologies	16	800/NEC-INFO				
186,187	Express Direct	81	800/765-0020	130	Netcom On-Line	54	800/NETCOM1				
37	Extensis	13	800/796-9798	77	Newer Technology	83	800/678-3726				
				35	Now Software	38	800/730-7862				
26	Graphsoft	46	410/290-5114	86	Now Software	56	800/237-2078				

Macworld

Product Index

A quick and easy product index from Macworld. Simply use this index to find the page or advertiser of the products which interest you. Then, use the reader service number for our FastFacts Product Information Card located on the following page.

Page No.	Advertiser	Reader Svc. No.	Page No.	Advertiser	Reader Svc. No.	Page No.	Advertiser	Reader Svc. No.	Page No.	Advertiser	Reader Svc. No.
SOFTWARE			NETWORKING			EXPANSIONS/UPGRADES			SERVICES		
BUSINESS			ONLINE			HARD DISKS/STORAGE			ON LINE		
63	Inspiration Software	—	61	SoftArc, Inc.	—	12	Portrait Display Lab	89	74	EarthLink Network	8
IFC,1	Microsoft Corporation	—	159	Xinet, Inc.	97	134	ViewSonic	59	124	Luckman Interactive	65
83	STF Technologies	80	OCR			193	L.A.Trade	—	68	Mactemps, Inc.	60
CAD/CAM			11	Caere Corporation	69	78	Trinity Works	118	130	Netcom On-Line	54
66	Ashlar, Inc.	40	SCIENTIFIC			INPUT DEVICES			TRADESHOWS/CONFERENCES		
26	Graphsoft	46	124	Luckman Interactive	65	BC	Kensington Microware Ltd.	1	155	MacActivity	—
CD ROM			35	Now Software	38	36	Microfield Graphics	—	142	Macromedia	36
18	Corel Corporation	78	127	Spry/Compuserve Internet Division	84	34	VideoLabs, Inc.	9	157	MacSummit	—
243	Educorp	157	163	Xinet, Inc.	99	57,58	Visioneer	18	150	Macworld Expo	—
10	Toyota Motor Sales	39	STATISTICAL			MISCELLANEOUS			162	Seybold Online	—
COMMUNICATION			87	SPSS INC.	85	122,123	American Power Conversion	72	146	Seybold San Francisco	—
23	Claris-Office Mail	—	UTILITIES			77	Newer Technology	83	ACCESSORIES		
164	Dataviz	79	81	Casady and Greene In	58	MICRO PROCESSOR			MISCELLANEOUS		
61	SoftArc, Inc.	—	80	Connectix - RAM Doubler	192	2,3	Power Computing Corporation	161	121	Avery International	17
83	STF Technologies	80	82	Connectix - Speed Doubler	193	6,7	Power Computing Corporation	151	36	Microfield Graphics	—
DATA MANAGEMENT			48	Dantz Development	26	78	Trinity Works	118	MAIL ORDER		
72	Claris- Filemaker	—	10	MicroMat	77	MISCELLANEOUS			178,179	Alliance Peripheral Systems	62
DIGITIZERS/SCANNERS			86	Now Software	56	77	Newer Technology	83	203	BottomLine Distribution/DGR Technologies	63
85	Agfa	158	HARDWARE			POWERBOOK			190,191	ClubMac	96
EDUCATIONAL			BOARDS			77	Newer Technology	83	183-185	Computer Discount Warehouse	2
76	Adam Software Inc.	37	14	Orange Micro	33	12	VST Power Systems	73	200	DC Pro	57
ENTERTAINMENT			CD ROM			PRINTERS			182	DigiCore	269
18	Corel Corporation	78	243	Educorp	157	24,25	Epson America	—	186,187	Express Direct	81
FONTS			21	NEC Technologies	14	79	QMS	288	180,181	J&R Computerworld	282
8	Alsoft	140	COMPUTER SYSTEMS			201	Texas Instruments	266	193	L.A.Trade	—
GRAPHICS/DTP			172,173	CRA Systems Inc.	20	13	Xante Corporation	112	169-171	LaCie	52
51	Adobe-Illustrator	252	182	DigiCore	269	SECURITY			188,189	Mac Bargains	70
65,67,69,71	Adobe-PostScript	251	186,187	Express Direct	81	122,123	American Power Conversion	72	174,175	Mac Zone	71
8	Alsoft	140	2,3	Power Computing Corporation	161	77	Newer Technology	83	176,177	MacConnection	145
22	Deneba Software	—	6,7	Power Computing Corporation	151	12	VST Power Systems	73	194,195	MacMall	131
37	Extensis	13	15	Umax Computer	200	VIDEO			192	MacMarket	258
28	Image Club	50	202	Westwood Computers	101	84	Connectix - QuickCAM	191	196,197	MacWarehouse	150
20	MetaTools, Inc.	4	DIGITIZERS/SCANNERS			34	VideoLabs, Inc.	9	198	MegaHaus	245
29	MetaTools, Inc.	5	9	Epson America	—	DIRECTORY			199	ProDirect	135
62	Microspot USA, Inc.	3	DISPLAY			Web Watch			202	Westwood Computers	101
43	Specular International	41	172,173	CRA Systems Inc.	20	133	Agfa	—	Web Watch		
161	Xinet, Inc.	98	64	Hitachi NSA	74	133	Box Top Software	—	133	Desktop Laser and Ink Jet Printer Lables	—
MISCELLANEOUS			109	Mitsubishi Electronics America	261	133	Image Club Graphics	—	133	Impossible Software	—
63	Inspiration Software	—	110,111	NEC Technologies	19	133	Macworld Online	—	133	NetJet	—
			IBC	NEC Technologies	16	133	The Software Solution	—			
			70	Polaroid	295						

TWO SIMPLE WAYS TO GET **FREE** PRODUCT INFORMATION

Macworld puts you in touch with the information you need most with two easy options:

1 dial 503.684.5370 Fax In Card

Simply fill in the questionnaire, circle the reader service numbers that correspond to the vendors you would like information from, then fax your form to us at 503.684.5370. FREE product information will be sent to you directly from vendors.

2 postage pre-paid Mail In Card

After filling in the questionnaire, circle the reader service numbers that correspond to the vendors you would like information from, then just drop the postcard in the mail. Vendors will send FREE product information directly to you.

READER SERVICE NUMBERS FOR ADVERTISED PRODUCTS CAN BE FOUND IN THE PRODUCT'S AD AND IN BOTH THE ADVERTISER INDEX AND PRODUCT INDEX.

Check this box to subscribe to Macworld

YOU WILL BE BILLED \$24 FOR A ONE-YEAR (12 ISSUE) SUBSCRIPTION (US ONLY). SUBSCRIPTION WILL BE SENT TO NAME AS NOTED BELOW PLEASE CHANGE IF MAILING ADDRESS IS DIFFERENT

- 1a. For which of the following Mac-related products do you specify, recommend, approve, purchase or influence the purchase?
1b. Which of the following do you plan to purchase in the next 12 months? (Check all that apply.)

	Purchase Involvement	Plan to Buy
Desktops/PowerBooks	<input type="radio"/>	<input type="radio"/>
Monitors	<input type="radio"/>	<input type="radio"/>
Printers	<input type="radio"/>	<input type="radio"/>
Storage Devices	<input type="radio"/>	<input type="radio"/>
Networking/Data Communications	<input type="radio"/>	<input type="radio"/>
Internet/Intranet products/services	<input type="radio"/>	<input type="radio"/>
Software: business/productivity	<input type="radio"/>	<input type="radio"/>
graphics/design	<input type="radio"/>	<input type="radio"/>
interactive publishing/multimedia	<input type="radio"/>	<input type="radio"/>
entertainment	<input type="radio"/>	<input type="radio"/>
education	<input type="radio"/>	<input type="radio"/>
other software	<input type="radio"/>	<input type="radio"/>
Any other products	<input type="radio"/>	<input type="radio"/>

2. Are you employed, and involved in purchase decisions for 5 or more Macs? ☐ Yes ☐ No

3. What's Your Opinion?

What are your main frustrations in making Mac-related purchase decisions?

- ☐ Lack of expertise in assessing products
☐ Difficulty in installing or using products
☐ Too many choices
☐ Not enough choices
☐ Unclear needs
☐ Concern that cheaper, better products are about to come out
☐ Other (please specify) _____

PRODUCT CATEGORY INFORMATION

For information on all of the products mentioned in an article or an entire category of advertised products, circle the appropriate number below.

- | | |
|--------------------------------|-----------------------------|
| 951 Mail Order Companies | 957 Utilities |
| 952 Printers | 958 Clip Art & Fonts |
| 953 Scanner & Digital Cameras | 959 Memory |
| 954 Online/Internet | 960 Draw/Paint/DTP Software |
| 955 Storage Devices | 961 Image-Editing Software |
| 956 Monitors & Graphics Boards | 962 Other Graphics Software |

1	2	3	4	5	156	157	158	159	160	271	272	273	274	275	486	487	488	489	490
6	7	8	9	10	161	162	163	164	165	276	277	278	279	280	491	492	493	494	495
11	12	13	14	15	166	167	168	169	170	281	282	283	284	285	496	497	498	499	500
16	17	18	19	20	171	172	173	174	175	286	287	288	289	290	501	502	503	504	505
21	22	23	24	25	176	177	178	179	180	291	292	293	294	295	506	507	508	509	510
26	27	28	29	30	181	182	183	184	185	296	297	298	299	300	511	512	513	514	515
31	32	33	34	35	186	187	188	189	190	401	402	403	404	405	516	517	518	519	520
36	37	38	39	40	191	192	193	194	195	406	407	408	409	410	521	522	523	524	525
41	42	43	44	45	196	197	198	199	200	411	412	413	414	415	526	527	528	529	530
46	47	48	49	50	201	202	203	204	205	416	417	418	419	420	531	532	533	534	535
51	52	53	54	55	206	207	208	209	210	421	422	423	424	425	536	537	538	539	540
56	57	58	59	60	211	212	213	214	215	426	427	428	429	430	541	542	543	544	545
61	62	63	64	65	216	217	218	219	220	431	432	433	434	435	546	547	548	549	550
66	67	68	69	70	221	222	223	224	225	436	437	438	439	440	551	552	553	554	555
71	72	73	74	75	226	227	228	229	230	441	442	443	444	445	556	557	558	559	560
76	77	78	79	80	231	232	233	234	235	446	447	448	449	450	561	562	563	564	565
81	82	83	84	85	236	237	238	239	240	451	452	453	454	455	566	567	568	569	570
86	87	88	89	90	241	242	243	244	245	456	457	458	459	460	571	572	573	574	575
91	92	93	94	95	246	247	248	249	250	461	462	463	464	465	576	577	578	579	580
96	97	98	99	100	251	252	253	254	255	466	467	468	469	470	581	582	583	584	585
101	102	103	104	105	256	257	258	259	260	471	472	473	474	475	586	587	588	589	590
106	107	108	109	110	261	262	263	264	265	476	477	478	479	480	591	592	593	594	595
111	112	113	114	115	266	267	268	269	270	481	482	483	484	485	596	597	598	599	600

PLEASE PRINT OR TYPE ALL INFORMATION.
Expires Nov. 21, 1996. 51 Aug. 1996

Name _____
Address _____
City _____
State _____ Zip _____
E-mail _____
Title _____
Company _____
Phone _____ Fax _____

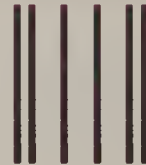
TWO SIMPLE WAYS TO GET **FREE** PRODUCT INFORMATION

Macworld puts you in touch with the information you need most with two easy options — fax back or mail in the reader service card.

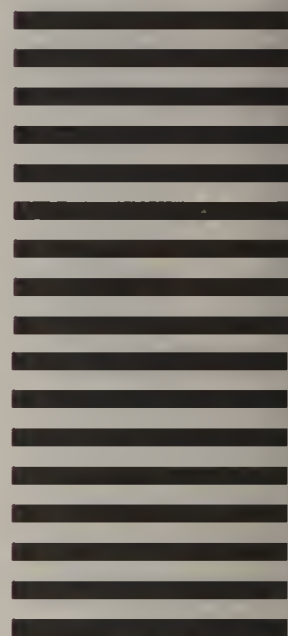
Fax back. Mail in. Just don't miss out.



50%
TOTAL RECOVERED FIBER



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES



BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 677 PORTLAND OR

POSTAGE WILL BE PAID BY ADDRESSEE

READER SERVICE DEPARTMENT
12950 SW PACIFIC HWY STE 7
TIGARD OR 97223-9747



AWARD-WINNING COLOR

SILVERSCANNERS

Compare these features:

- Color previews in seconds.
- Scans in under a minute.
- The industry's leading scanning software.

"ScanPrep is an essential application if you own a scanner... the sort of program that has to be seen to be believed." **Ben Long - MacWeek**

Highest Possible Rating



"No matter what acquired plug-in you get if you use Photoshop, you'll also want to buy a copy of ScanPrep."

- **MacUser**

Highest Possible Rating



SilverScanner PRO

24 bit color, 300 x 600 dpi
interpolated to 1200 dpi.

- ▲ SilverScan
- ▲ ScanPrep
- ▲ Omnipage Lite OCR

\$599

SilverScanner PRO with Photoshop LE

24 bit color, 300 x 600 dpi
interpolated up to 1200 dpi.

- ▲ Photoshop LE
- ▲ ScanPrep
- ▲ SilverScan
- ▲ Omnipage Lite OCR

\$669

SilverScanner DTP

30 bit color, 400 x 800 dpi
interpolated to 3200 dpi.

- ▲ SilverScan
- ▲ ScanPrep
- ▲ Omnipage Lite OCR

\$799



SilverScanner DTP with Photoshop LE

30 bit color, 400 x 800 dpi
interpolated up to 3200 dpi.

- ▲ Photoshop LE
- ▲ ScanPrep
- ▲ SilverScan
- ▲ Omnipage Lite OCR

\$889

SilverScanner III

30 bit color, 600 x 1200 dpi
interpolated up to 4800 dpi.

- ▲ SilverScan
- ▲ ScanPrep
- ▲ Omnipage Lite OCR

\$1499



SilverScanner III with Photoshop Full

30 bit color, 600 x 1200 dpi
interpolated up to 4800 dpi.

- ▲ Photoshop (Full Edition)
- ▲ ScanPrep
- ▲ SilverScan
- ▲ Omnipage Lite OCR

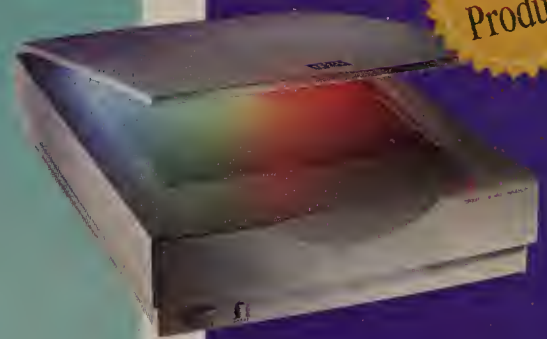
\$1659

Sheet Feeder Adapter (DTP and III)

\$499

Transparency Adapter (DTP and III)

\$799



NEW Product



1 Year Scanner Warranty



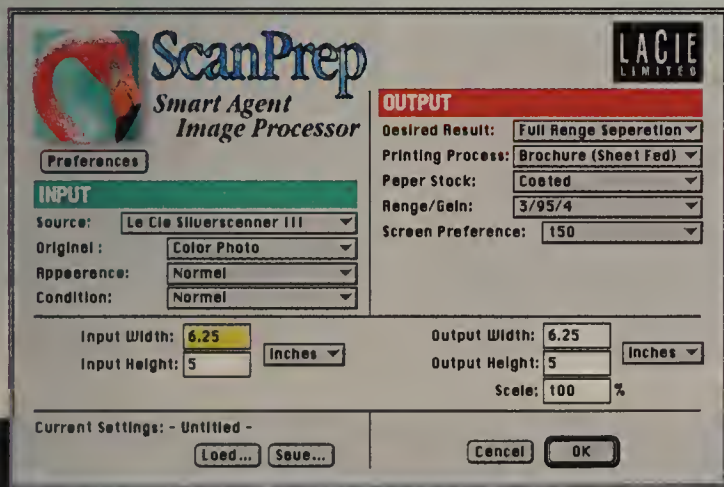
30 Day Money Back Guarantee

FREE with all La Cie scanners, ScanPrep automates Photoshop's* image processing tools, individually preparing each image for printing right before your eyes. Simply describe the project to ScanPrep

and scan the base image. ScanPrep yields professional prepress results, quickly and easily.

ScanPrep provides automatic adjustment of picture contrast and color saturation. Even when the original is lacking in contrast or saturation, it corrects the problem without human intervention.

*Full version only.



More customer support

Toll-free tech line:

1-800-288-9919

<http://www.lacie.com/~lacie>

Call 1-800-999-0182

* La Cie Storage Utilities FREE with the purchase of a La Cie Drive. Call for details, conditions, limited money back guarantee, and free offers. Prices do not include shipping and only apply to products shipped within the continental United States. Add sales tax where applicable. SilverScan, Silverlining, La Cie and the La Cie logo are trademarks of La Cie, Ltd. Photoshop is a trademark of Adobe, Inc. ScanPrep is a trademark of ImageXpress. Omnipage is a trademark of Caere. All other trademarks are the property of their respective companies. All prices, specifications, terms, warranties, descriptions, products and services herein are subject to change without notice or without recourse. © Copyright 1996 La Cie, Ltd. All rights reserved.

LACIE LIMITED

offers a **world of storage solutions**

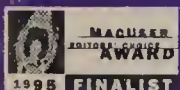
La Cie Storage Utilities FREE! With All La Cie Drives



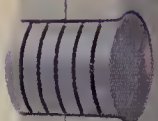
All products bearing this Storage Utilities



mark include acclaimed Silverlining Disk management software plus four other vital performance enhancements, a \$99 value... **FREE!**



EXTERNAL DRIVES TSUNAMI



▲ Ready to plug and play with switchable active termination, cables, and La Cie Storage Utilities.

\$327

Quantum 1280 MB

850MB Quantum Trailblazer	3 yr. warr.	\$249
1280MB Quantum Fireball	3 yr. warr.	\$327
2160MB Ultrastar ES	5 yr. warr.	\$499
4.3GB Quantum Atlas	5 yr. warr.	\$929

POWER WIDE DRIVES

▲ Utilize Wide-SCSI technology for high-speed, high capacity file transfer

FAST: 1 drives + 1 card	
WRITE	7.0 MB/Sec
READ	7.7 MB/Sec
FASTER: 2 drives, 2 cards + RAID	
WRITE*	13.0 MB/Sec
READ*	14.3 MB/Sec
FASTEST: 3 drives, 3 cards + RAID	
WRITE*	32.8 MB/Sec
READ*	27.0 MB/Sec

Power Wide External Drives

2.0GB Quantum Atlas Wide + Wide PCI Adaptec 2940 Board	NEW!	\$1199
4.0GB Quantum Atlas Wide + Wide PCI Adaptec 2940 Board	NEW!	\$1399
2.0GB Quantum Atlas Wide + RAID + Wide PCI Adaptec 2940 Board	NEW!	\$1299
4.0GB Quantum Atlas Wide + RAID + Wide PCI Adaptec 2940 Board	NEW!	\$1499

* RAID Level 0 (Striped) For PCI Macs only

CD-ROM 8X DRIVE



- ▲ Fastest access speed available.
- ▲ Transfer rates up to 1200 kb/sec.
- ▲ Smooth audio and video playback.

\$299

8X CD-Rom

INTERNAL DRIVES



▲ High-performance drive and controller technology.

\$849

Quantum Atlas 4.3 GB

3.5" Drives		
850MB Quantum Trailblazer	3 yr. warr.	\$179
1280MB Quantum Fireball	3 yr. warr.	\$257
2160MB Ultrastar ES	5 yr. warr.	\$429
4.3GB Quantum Atlas	5 yr. warr.	\$849

Brackets available for \$10 with internal hard drive purchase.

TOWER JOULE DRIVES



3.5" Drives with Mount

For use in Tower with a Joule Base:

850MB Quantum Trailblazer	3 yr. warr.	\$329
1080MB Quantum Fireball	3 yr. warr.	\$369
2160MB Ultrastar ES	5 yr. warr.	\$649
4.3GB Quantum Atlas	5 yr. warr.	\$1069
8.0GB DAT DDS-2	Includes Retrospect	\$959
8.0GB TURBO DAT DDS-2	Inc. Retrospect	\$1159

Joule Bases - Supports Stacks Up To 6 Drives High

850MB Quantum HD	3 yr. warr.	\$389
1080MB Quantum HD	3 yr. warr.	\$429
2160MB Ultrastar ES HD	3 yr. warr.	\$699
230MB Optical	1 yr. warr.	\$529

DLT DRIVES

- ▲ Transfer rates from 150 to 180 MB per minute.
- ▲ Flexible cache buffer automatically adjusts to slower host data transfer rates.

Maximum Storage Capacity
Ideal for network servers and high-end work stations

\$2999

30.0GB DLT External

DLT Drives	Includes Retrospect
30.0GB Quantum DLT External	\$2999
40.0GB Quantum DLT External	\$4999

PORTABLE JOULE DRIVES



▲ Docking provides new security and backup solutions.

- ▲ Share hard disk-sized files with diskette convenience.
- ▲ Unplug and go for convenient data transport.

Joule 3.5" Drives with Dock

850MB Quantum Trailblazer	3 yr. warr.	\$329
1080MB Quantum Fireball	3 yr. warr.	\$369
2160MB Ultrastar ES	5 yr. warr.	\$649
8.0GB DAT DDS-2	Includes Retrospect	\$959
8.0GB TURBO DAT DDS-2	Inc. Retrospect	\$1159
230MB Optical	1 yr. warr.	\$499

RAID JOULE DRIVES



▲ Ideal for high performance applications like multi-media and animation.

▲ User can easily configure RAID level 0, 1, 4 or 5.

Joule RAID

Quantum drives bundled with Trillium Research Software configurable to levels 0, 1, 4 & 5.

	RAID Drives only	RAID with SCSI card
4.2GB	\$1999	\$2299
8.4GB	\$3499	\$3799
16.8GB	\$6999	\$7299
25.8GB	\$9999	\$10299

DAT DRIVES

- ▲ The ideal medium for data backup.
- ▲ The cheapest backup solution per megabyte.



\$899

8.0GB DAT DDS-2

DAT Drives	Includes Retrospect
8.0GB DAT DDS-2 External	\$899
8.0GB TURBO DAT DDS-2 External	\$1089

Mon.- Fri. 5AM-7PM & Sat. 8AM-NOON PST
International 503-520-9000
Fax 503-520-9100 (24 hrs.)
<http://www.lacie.com/~lacie>



* La Cie Storage Utilities FREE with the purchase of a La Cie Drive. Call for details, conditions, limited money back guarantee, and free offers. Prices do not include shipping and only apply to products shipped within the continental United States. Add sales tax where applicable. Tsunami, Joule, Joule Portable, La Cie Term, Silverlining, La Cie and the La Cie logo are trademarks of La Cie, Ltd. All other trademarks are the property of their respective companies. All prices, specifications, terms, warranties, descriptions, products and services herein are subject to change without notice or without recourse. © Copyright 1996 La Cie, Ltd. All rights reserved.

CD-R DRIVES



- ▲ Low cost media for backup.
- ▲ CD-Rs ship with Gear Multimedia software.
- ▲ Create your own CD with fast write capability.

\$699
2X Recordable

CD-Recordables

2X Recordable with Gear MultiMedia	\$699
4X Recordable with Gear MultiMedia	\$1299
650 CD-R Disk 74 Minutes 10 Disk Pack	\$89

OPTICAL DRIVES



- ▲ Optical is the new standard in removable reliability.
- ▲ Available in two popular capacities.
- ▲ Compact storage convenience.

\$599
650MB Optical

	Powerbook	Internal	External
230MB 1 yr. warr.	\$399	\$389	\$399
640MB External 1 yr. warr.			\$599
2.6GB External 1 yr. warr.			\$1799

SILVERSCANNER PRO



- ▲ 24 bit color, 300 x 600 dpi interpolated to 1200 dpi.

Package 1 \$599
Includes: SilverScan, ScanPrep, OmniPage Lite OCR

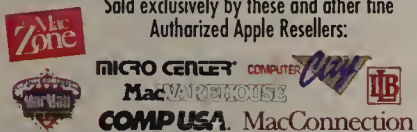
Package 2 \$669
Includes: Photoshop LE, SilverScan, ScanPrep, OmniPage Lite OCR

APPLE EXTERNAL HARD DRIVES

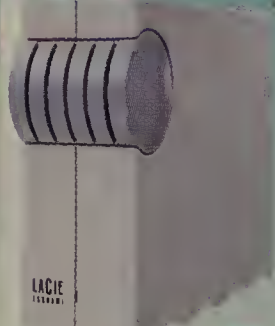


The only hard drive backed with Apple engineering. For a local reseller or catalog resource call 1-800-999-0499.

Sold exclusively by these and other fine Authorized Apple Resellers:



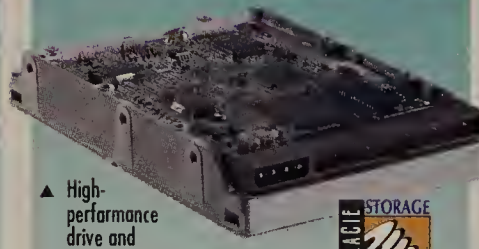
EXTERNAL DRIVES TSUNAMI



- ▲ Ready to plug and play with switchable active termination, cables, and La Cie Storage Utilities.

\$499
Quantum 2160 MB

INTERNAL DRIVES



- ▲ High-performance drive and controller technology.

\$257
Quantum 1280 MB

CARTRIDGES

	Qty. 1	Qty. 10
Syquest SQ400 44MB	\$38 ea.	\$37 ea.
Syquest SQ800 88MB	\$42 ea.	\$41 ea.
Syquest SQ2000 200MB	\$66 ea.	\$65 ea.
Syquest EZ135 135MB	\$18 ea.	\$17 ea.
Syquest SQ3270 270MB	\$54 ea.	\$53 ea.
Iomega Jaz 1GB	\$119 ea.	\$99 ea.
Optical 128MB	\$23 ea.	\$22 ea.
Optical 230MB	\$25 ea.	\$24 ea.
Optical 640MB	\$49 ea.	\$47 ea.
Optical 1.3GB	\$59 ea.	\$58 ea.
Optical 2.6GB	\$99 ea.	\$97 ea.
CD-R 74 650MB		\$8⁹⁰ ea.
DAT 90m	\$9 ea.	\$8 ea.
DAT 120m	\$20 ea.	\$19 ea.
DAT Cleaning Kit	\$9 ea.	\$8 ea.
DLT 30 30GB	\$40 ea.	\$39 ea.
DLT 40 40GB	\$98 ea.	\$97 ea.

SYQUEST DRIVES



LA CIE & SYQUEST OFFER!
Includes coupon for 2nd cartridge by mail for a total of **2 FREE** cartridges! (\$59.90 value)

\$187
SYQUEST EZ135

JAZ WITH 3 CARTRIDGES

- ▲ 1 GB of data on sturdy and compact 3.5-inch disks.
- ▲ Exclusive La Cie metal case.
- ▲ Power supply included in the casing.
- ▲ Includes 3 cartridges!

MacWeek \$699
JAZ 1GB w/3 Cartridges

LA CIE LIMITED

offers versatile **storage solutions**

30 Day Money Back Guarantee

Toll Free Technical Support

Factory Direct Quality & Value

Ready to Plug And Play

Friendly! Fast! **More customer support**

Toll-free tech line:
1-800-288-9919
<http://www.lacie.com/~lacie>

Call Today 1-800-999-0182



radius

Quantities are Limited...

AWARD WINNING PRODUCTS

DISPLAYS

TWENTY ONE INCH DISPLAYS

21Inch DiamondTron Monitor

- Rated Superior to Trinitron
- Two year Mfr's Warranty
- Largest Aperture Grille monitor available
- Up to 1600x1200 on Macs and PCs
- Full Digital Control from Keyboard

from
\$1999*

Radius SuperMatch 21 TXL

Radius PrecisionView 21

Radius PressView 21sr

SuperMac PressView 21 "Editors Choice"

from **\$1699*****\$CALL**from **\$2899*****\$1999*****\$1499*** Radius PrecisionColor Display 21

Compare at \$2399

- 1600x1200 to 1024x768
- Razor sharp dot pitch
- Best for color accuracy
- Selectable color temperatures

RasterOps SuperScan MC 21

Radius Multiview 21

Radius 21 inch Grayscale Display

\$CALL**\$CALL****\$799**

*With qualifying videocard, accelerator, or computer purchase

TWENTY INCH DISPLAYS

TRINITRON BLOWOUT-LOWEST PRICE EVER!

While Supplies Last!

\$999*

20" Trinitron Display

- Manufactured by Sony
- Industrial Grade Trinitron CRT



SuperMac SuperMatch 20 Plus

Radius PrecisionColor 20v

Digital 20 inch Display Up to 1280x1024

RasterOps 20 Multimode

Radius PrecisionColor 19

\$999***\$1099*****\$1399****\$1299****\$899***from **\$1499*** Radius IntelliColor Display 20

Retail \$2399

- MacUser, MacWorld, MacWeek Editor's Choice
- 1600x1200 to 640x400

Apple Multiple Scan 20 Display

Ikegami 20 inch Grayscale Display

Radius 20 inch Grayscale Display

\$CALL**\$699****\$699**

*With qualifying videocard, accelerator, or computer purchase

SEVENTEEN INCH DISPLAYS

\$599*

Compare at \$1299

SuperMac/E-Machines T1611MR

- High Grade Studio Trinitron Series
- .25mm multi-resolution
- Editors Choice
- 1024x768 to 640x480 resolutions

SuperMatch 17r

PrecisionColor Display 17

PrecisionView 17

Radius PressView 17sr

SuperMac SuperMatch 17

from **\$799***from **\$899****\$CALL****\$CALL**from **\$499***

*With qualifying videocard, accelerator, or computer purchase

PORTRAIT DISPLAYS

\$399*

Radius Color Pivot LE

We have cards for SE/30, LC, IIsi
Nubus, and Quadras

* With purchase of video card.

PrecisionColor Pivot

Grayscale Pivot

Radius Full Page Display

Apple Portrait Display

Portrait Display Labs 1700

E-machines ColorPage 15 with NUBUS card

\$599**\$399****\$CALL****\$399****\$CALL****\$499**

COLOR CALIBRATORS

SuperMac Display Calibrator

SuperMac Display Calibrator PRO

Radius Mac ProSense Calibrator

only **\$199****\$499****\$799**

VIDEO CARDS

1600x1200 PCI & NUBUS

Radius Thunder IV GX 1152

Radius Thunder II GX 1360 & 1600

Radius Thunder IV GX 1360 & 1600

Radius Thunder 24/GT (accepts PhotoEngine)

Radius ThunderColor 30/1152 & 1600

IMS Twin Turbo 128M (4MB with MPEG)

Radius PrecisionColor 8/1600

EA Research EAsycolor 1600/16

\$BELOW COSTfrom **\$999**from **\$1599****\$CALL****\$CALL****\$599****\$499****\$CALL**

21" RESOLUTIONS

Radius PrecisionColor Pro 24X

Thunder 8 "Fastest 8 bit card ever"

Thunder 24 (DSP available)

Radius LeMans GT

SuperMac Ultima LX*

RasterOps Horizon 24*

RasterOps 24XLTV

RasterOps Prism GT

Radius PrecisionColor 8XJ

\$699**\$CALL****\$CALL****\$799**from **\$899**from **\$999****\$1999****\$CALL****\$499**

*DSP Available

20/19" RESOLUTIONS

SuperMac Spectrum 24 Series V

Radius PrecisionColor Pro 24XK

SuperMac Futura MX

RasterOps PaintBoard Lightning

SuperMac Spectrum 8

PowerView/SuperView for Powerbooks **\$199/\$299****\$599****\$CALL****\$499****\$CALL****\$199**

17/16" RESOLUTIONS

Radius 24 bit video cards

Radius PrecisionColor Pro 24XP

SuperMac Futura SX

RasterOps 24 MX

from **\$199****\$CALL****\$299****\$399**

PHOTOSHOP ACCELERATION

Radius PhotoEngine

- Four AT&T 3210 66MHz DSPs
- Accelerates Photoshop Filters
- Up to 15x acceleration on all Macs
- MacUser Editor's Choice
- Available in Daughtercard or NUBUS versions

from **\$399***

Radius Photo Booster for Quadra/PDS or Rockets

SuperMac DSP daughter cards for Thunder/Ulturas

from **\$199****\$299**

DIGITAL VIDEO

Video Vision Studio 2.5.1

- 24bit Full-Screen, Full-Motion Video
- Includes Adobe Premiere and VideoFusion
- Breakout bar supports dual input
- * with purchase of Studio Array

\$1999*

Video Vision Studio Array

- 4GB RAID Customized for Video Vision
- Includes Fast & Wide SCSI-2 accelerator board
- Chain up to three Arrays together (4GB, 8GB, 12GB)

\$1999

Video Vision Telecast

- Full-motion, broadcast-quality video
- Available as upgrade for Video Vision Users

from **\$2999**

miroMOTION DC20 M-JPEG PCI video capture & playback

ATTO Silicon Express IV 20MB/sec SCSI accelerator

Truevision Targa 1000 & 2000 PCI/NUBUS

RasterOps 24XLTV

RasterOps MoviePak II JPEG Daughtercard Upgrade

Spigot II Tape Now Bundled with Adobe Premiere

VideoSpigot Cards Nubus/LC/IIsi

Radius Spigot Power AV

*With purchase of Adobe Premiere

\$CALL**\$599****\$CALL****\$1999****\$CALL****\$499**from **\$99*****\$799**800/375-9000
<http://www.cra-sys.com>

AT OR BELOW DEALER COST!

CPU SPECIALS

POWER MACS



**All PCI PowerMacs
Available -- CALL for
Lowest Prices Ever!!**

PowerMac 9500/120, 132 & 150MHz	from \$2999
PowerMac 8500/120, 132 & 150MHz	from \$3099
PowerMac 7500/100 & 7600/120	from \$1999
PowerMac 7200/90 & 120MHz	from \$1299



Save up to \$500 on Complete System Purchase!!

PowerMac Performa 6200 8/1000/CD	\$999*
Power PC 603/75MHz RISC processor Internal 14.4kbps modem & 4x CD-ROM drive	\$1199
PowerMac Performa 5200CD	\$1299*
Integrated 15" Display & 4x CD-ROM drive Power PC 603/75MHz RISC processor	
Power Macintosh 7100/80 8/700/CD	
60MHz PPC 601 RISC processor TV upgrade supports full motion video CPU only, with Qualifying Card or Monitor Purchase	

QUADRA/MAC II SERIES

Quadra / Centris 610 8/80/CD	only \$699
Quadra 700 8/80	\$799
Quadra 800 8/250/CD NEW	\$IN STOCK
Quadra 840AV 8/250/CD w/ Spigot Power AV	\$1999
Quadra 950 8/500	\$1399
Mac IIsi Color Pivot System	\$299
Macintosh IIsi with 5MB RAM/80MB HD Radius Color Pivot Display Extended 105-key Keyboard FREE ClarisWorks!	CPU only
Complete system	\$799
Add Radius Card for Display to TV	only \$199
Add Apple Cache Card to Macintosh IIsi	\$39
Mac IIfx 15" Color System	\$275
Macintosh IIfx with 4MB RAM/80MB HD E-machines ColorPage 15" Display NUBUS accelerated video Extended 105-key Keyboard FREE ClarisWorks!	CPU only
Complete system	\$849
Add MacRecorder to Mac IIfx	only \$99
Add Ethernet card to Mac IIfx	from \$99
with purchase of any qualifying monitor	
Mac Plus System w/Keyboard & Mouse	only \$149
Macintosh SE upgraded with 16/25MHz 68020 processor	from \$299

POWERBOOKS

PowerBook 5300 series	\$CALL
PC Upgraded Color PowerBooks	from \$2299
PowerBook 520c	from \$1499
PowerBook 190 series	\$CALL
PowerBook Duo 210/230	from \$699
PowerBook Duo 270c/280c	\$CALL
Ethernet Dock for Powerbook Duo's	\$399*
Apple Duo Docks	from \$499*
Add GCC WriteMove II portable printer	\$199*
with purchase of a PowerBook	

CPU UPGRADES

Raystar PowerPC and 040 Accelerators	\$CALL
Radius Rockets 33MHz to 40MHz	from \$399
Age Two Rocket 40MHz w/FPU	\$699
Includes SCSI II Booster and RocketShare	
Rocketshare multiprocessing software	\$299
Motorola 68040/33 & 68040/40's	\$149/249

Radius

PhotoEngine

From

\$399

PRINTERS

Ask about Printers available in 220v!

COLOR PRINTERS

QMS ColorScript 1000

- Internal SCSI drive
- Powerful RISC processor
- PostScript Level 1, 2 and HP/PCL-5

from **\$1999**

QMS Magicolor 600 dpi

Radius Proof Positive

- Award Winning dye-sublimation printer
- Full-bleed two page and one-page models
- True Adobe Postscript Level 2
- All consumables available

only **\$2999**
\$CALL

QMS ColorScript 210/230

- Up to 11x17" full-bleed output

from **\$1199**

Tektronix Phaser 300i

Tektronix 540 Plus color Laser

\$CALL

\$CALL

TABLOID LASERS

QMS 860 Hammerhead 600 -1200dpi

- 11 x 17 full bleed
- PostScript Levels 1&2
- 8ppm heavy-duty Canon engine
- Powerful RISC processor

from **\$1999**

Hewlett-Packard 4mv

GCC SelectPress 1200x1200dpi

QMS PS2210/2220

- 20,000 page monthly duty cycle
- 22ppm • Dual-tray input

\$CALL
\$4999
\$1499/\$1699

HOME/OFFICE

QMS PS1500 / PS1700 for Macs and PCs

- True Adobe Postscript
- 15ppm to 17ppm output
- Dual Paper input
- 50,000 print monthly duty cycle

from **\$1299**

Hewlett-Packard 5mp 600dpi

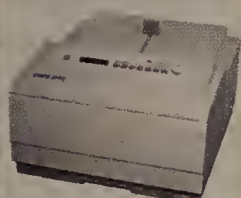
GCC Elite 600et 10ppm, 600dpi, ethernet

Apple Select 360 10ppm, 600dpi

\$CALL

\$CALL

\$1199



**New and
Reconditioned
Models
of Most Items
Available**

CRA Systems, Inc.

300 South 13th St., Waco, TX 76701



Monday thru Friday 9AM to 7PM CST Saturday 10AM-4PM Sales Dept. Only

Domestic Sales SALES@CRA-SYS.COM Fax 817.750.9050

Consultants/Dealers 817.754.2120 International Sales 817.754.2120

Prices reflect 2% cash discount. Prices subject to change. Not liable for typographical errors. All shipping charges for COD orders to be secured by credit card.

Dealers and consultants call for quantity pricing. We ship anywhere.



800/375-9000
http://www.cra-sys.com





your **Macintosh**[®] catalog **SuperStore**[™]

Serving Mac users since 1986

**HOT
BUNDLE!**



**Only
\$227⁹⁸**
#87219

**ZipPac
HardCase
w/Iomega
Zip Drive
Bundle**



NEW!
**Only
\$79⁹⁸**
#89308

**Insignia Solutions
SoftWindows
3.0 for Power
Mac Upgrade**



**NEW
LOW
PRICE!**
**Only
\$199⁹⁸**
#92953

**U.S.
Robotics
Sportster V.34
28.8/33.6 Faxmodem**



NEW!
**Only
\$44^{98*}**
#92638

*After \$20 mfr.
mail-in rebate.

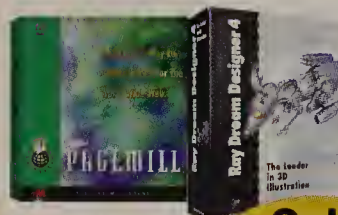
Low Mac Zone price: \$64.98

**ClarisWorks 4.0
Version Upgrade**



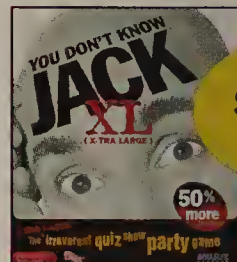
SAVE \$100
**Only
\$498⁹⁸**
#89941

**Microtek
ScanMaker IHR**



SAVE \$48
**Only
\$148⁹⁸**
#86447

**Adobe
PageMill
& Ray Dream
Designer 4 Bundle**



**Only
\$44⁹⁸**
#85046

**Berkeley Systems
YOU DON'T KNOW
JACK XL X-Tra Large CD**

**OKIDATA[®]
OL410e Postscript
Laser Printer**



**EXCLUSIVE
BLOWOUT!**

**Only
\$499⁹⁸**
#93689

**EXCLUSIVE
BLOWOUT!** **ADESSO**

**PowerBook
Battery &
Charger
Combo
Pack**

**Only
\$59⁹⁸**
#95637



**NEW
LOW
PRICE!**

**Only
\$239⁹⁸**
#88902

**Hewlett-
Packard
DeskWriter 600**



**Lowest Priced
15" Monitor!**

**Only
\$399⁹⁸**
#85806

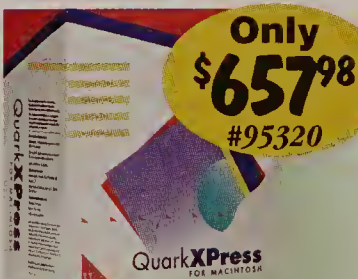
**Performantz
15" Monitor
(13.6" viewable)**



**SAVE
OVER \$82!**

**Only
\$89⁹⁸**
#86011

**RAM Doubler/
Speed Doubler/Conflict
Catcher 3 Bundle**



**Only
\$657⁹⁸**
#95320

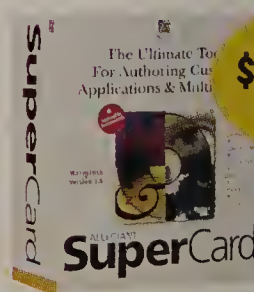
**Quark
QuarkXPress
3.32
for Mac/Power Mac**



**1996 Grolier
Encyclopedia
included!**

**Only
\$298⁹⁸**
#84302

**Performantz
8X CD-ROM
Drive**



**Only
\$398⁹⁸**
#88214

**With FREE
Multimedia
MegaStudio**

**Allegiant Technologies
SuperCard 2.5**



**Starting At
\$119⁹⁸**

**SyQuest
Removable Drives**

Before you buy, call The Mac Zone

1-800-436-0606

For the best Macintosh products at better than
Warehouse and Superstore prices.

Fax (206) 603-2500 • International (206) 603-2550 • CompuServe code: GO MZ

CORPORATE SALES 1-800-258-0882
GOVERNMENT SALES 1-800-372-9663
EDUCATION SALES 1-800-304-0253
INTERNATIONAL SALES 1-206-603-2570

© Copyright 1996 Multiple Zones International Inc. All rights reserved. The Mac Zone is a federally registered trademark.

Full Line of Apple® Macintosh® Computers



Over 5000 Products



Overnight Delivery only \$3 (up to 10 lbs)



The Hottest Bundles!



Low Prices Everyday

ORDER ANYTIME
24 HOURS A DAY
7 DAYS A WEEK



Authorized Catalog Reseller

The SuperMac S900 Series

NEW!

As Low As
\$3095

Monitor sold separately.

UMAX®
Computer Corporation

Cyberport 28.8 Fax Modem

EXCLUSIVE BLOWOUT!

Only
\$99⁹⁸
#90235

Prometheus®

MEMORY UPGRADES!

Call for lowest prices.

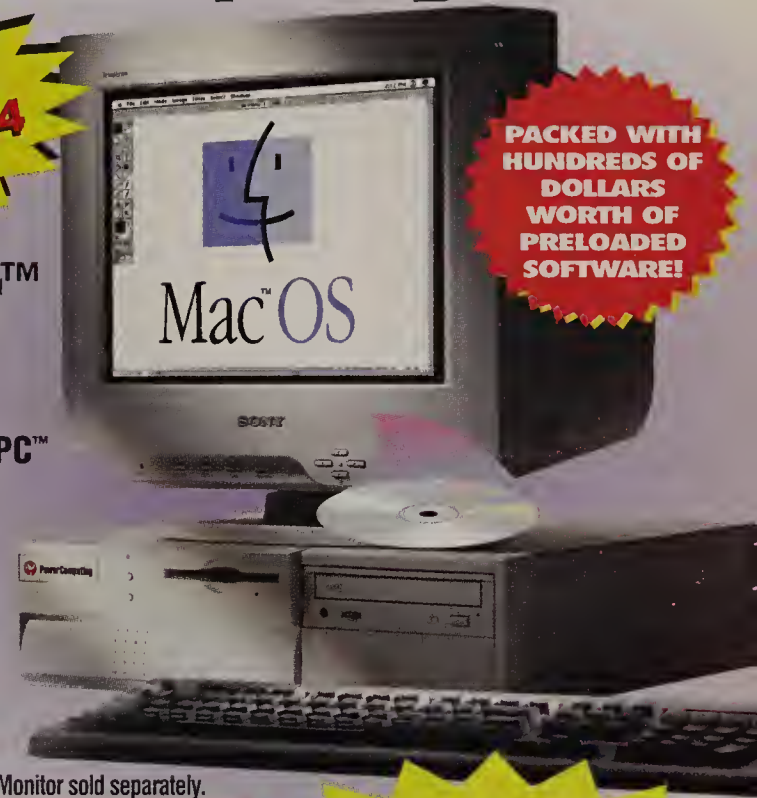
4MB
As Low As
\$79⁹⁸



PowerComputing

NEW PowerPC 604 Series! PowerCenter™ Computers

- 120, 132 or 150MHz PowerPC™ 604 processor
- Level-2 Cache
- 1MB VRAM
- 8 or 16MB RAM, upgradable to 256MB
- 850MB or 1GB hard drive
- 4X speed CD-ROM drive
- Keyboard and mouse



PACKED WITH HUNDREDS OF DOLLARS WORTH OF PRELOADED SOFTWARE!

INCLUDES: CD-quality, 16-bit stereo sound • Three PCI expansion slots • Two front accessible 5.25" bays, one 3.5" half height internal drive, and one 3.5" full height or two 3.5" half height internal bays • Built-in Ethernet (AAUI and 10Base-T)

More Configurations Available!

As Low As
\$1895

Sleepless in Seattle...

You bet! We're here 24 hours a day, 7 days a week to serve you when you need us.



1-800-436-0606
Call Today for Your **FREE CATALOG!**

Shop The Mac Zone ONLINE!

Online Shopping
Internet Address:

Visit our store on marketplaceMCI:
<http://www.internetMCI.com/marketplace/mzone>

CompuServe type: GO MZ

The Mac Zone - Trusted Internationally

Australia	Indonesia	Poland
Austria	Israel	Portugal
Benelux	Italy	Scandinavia
Brazil	Japan	Singapore
Central America	Kenya	Spain
Chile	Korea	Switzerland
Colombia	Malaysia	UAE/Middle East
France	Mexico	United Kingdom
Germany	New Zealand	Venezuela
Hong Kong		

Your Source Code
MW608

Circle 71 on the reader service card

YES! START MY FREE 1-YEAR CATALOG SUBSCRIPTION ASAP!



☐ MAC ZONE



☐ PC ZONE



☐ the Home Computer CATALOG

Name _____
Address _____
City _____

State _____ Zip _____

Mail to: The Mac Zone, 15815 SE 37th St., Bellevue, WA 98006-1800

I buy primarily for:

☐ Home Use
☐ Business Use
☐ Work-from-Home Use

Your Source Code
MW608

POWER COMPUTING

NEW! Power Computing PowerCenter



Monitor Sold Separately

**ONLY
\$1895**

28807

The economical power solution

- 120MHz PowerPC 604 card, upgradeable RISC processor
- FREE pre-loaded software—A \$1200 value
- 8MB RAM, exp. to 256MB
- 256K level 2 cache; 850MB hard drive
- 4x CD-ROM drive; 1.44MB floppy drive
- Built-in Ethernet (10T, AAUI) networking
- 16-bit CD-quality audio (in/out)
- Low profile desktop enclosure

CALL 800-800-6227 to order!

FREE!

**MEMORY
INSTALLATION!**

DIMMS

8MB as low as \$99⁹⁵ | 16MB as low as \$199⁹⁵ | 32MB as low as \$399 | 64MB as low as \$899⁹⁵

SIMMS
as low as
\$24⁹⁵

Purchase a computer & memory upgrade together and we'll install your new memory upgrade at no extra charge!



HITACHI
NSA
HISSEI SANGYO AMERICA, LTD.

SuperScan MC17

- 1600x1200 maximum resolution
- 15.9" viewable image size
- 0.26 mm dot pitch
- Flat black matrix CRT
- Refresh rates from 66 to 120 Hz
- Easy Menu on-screen display

**ONLY
\$899**

28626

28601 SuperScan MC21 \$1799

ORDER TODAY!



Full Line of Apple® Systems
800-800-MACs

SAVE \$30!

Save \$30 on TextBridge Pro, the easy-to-use scanning software from Xerox, when you purchase any scanner!

**SPECIAL
SCANNER BUY!**
Epson ES-1000C offers 400x800 dpi optical & 3200 dpi interpolation. Purchase includes Adobe Photoshop LE and Xerox TextBridge OCR software!

21949 **\$749⁹⁹**

**ONLY!
\$99⁹⁵**
29269

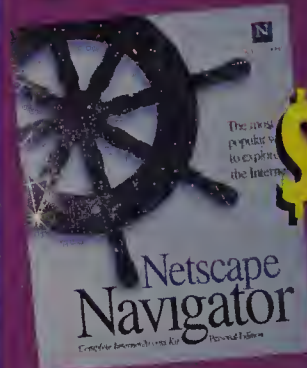


XEROX

Ma

BEST PRICING & SELECT

NEW VERSION 2.0!



**ONLY
\$44⁹⁵**

24238

Offers an integrated suite of Internet applications combined with new advanced features. Easy enough for Net novices with enough exciting features for Internet pros!



Miramar Systems, Inc.

Allows Windows PC to act as server/client for network PCs and Macs. "Simply the best AppleTalk for Windows product you can buy."

- MacUser, November 1995



NEW NETOPIA!

**NEW LOW PRICE
\$399**

28886

Farallon's Netopia ISDN modem offers high-speed Internet access and data transmission for the small office or home.

OVER 112 MILLION LISTINGS!



\$144⁹⁵

Nine CD set that offers various searches of business and residential phone listings.

28586

COMMUNICATIONS

28251	80CA MV34MA Faxmodem 28.8	\$169.95
20544	Global Village TelePort Platinum v.34	199.95
18363	Hayes ACCURA v.34+ Fax 14.4	159.95*
23487	Megahertz CruiseCard 28.8 w/XJACK	259.95
4879	Practical Periph MC144MTII	84.95
18792	Radish Comm InsideLine	109.95
22236	Software Ventures Internet Valet	39.95
24560	SurfWatch	19.95
17048	U.S. Robotics Sportster V.34 Fax	199.95
26793	VOCALTEC Internet Phone	44.95
17470	Zoom FaxModem V.34	169.95

MULTIMEDIA/VIDEO

19485	Altec ACS500 Speakers	\$299.95
25826	IMS Twin Turbo 128M-4M PCI	579.
26885	Kodak DC50 Zoom Camera	999.
21182	MDS 4X CD-RDM External Drive	179.95
17314	Magnavox 14" Color Display	279.95
25623	Matrox MGA Millennium 4M8 PCI	479.
25700	MagInnovision DX1795 17" Monitor	699.
27690	Power Secretary PE for Word	595.
27744	Viewsonic GT800 20" Monitor	1899.

*price after mfr's rebate (expires 8/31/96)

NETWORKING

2583	Asanté FriendlyNet 10T	\$29.95
24593	Dayna Communicard 10T PC Card	159.
23713	Dayna Communicard 14.4 Faxmodem	99.
21362	DaynaPDRT Enet LCCommSlot	79.
23492	Farallon AirDock IR Adapter	69.
11499	Farallon EtherWave AAUI Trans	109.
1723	Farallon PN303 DIN-8 3 pack	49.95
15490	Sonic 10BaseT Transceiver	33.95
16854	Sonic Micro Print/12	319.
22503	Sonic Quickstream/3	799.
14545	Timbuktu Pro-Mac	135.

STORAGE

22886	Apple External 850M8 Drive	\$349.95
27344	Conner 2.1G8 Drive	649.
27644	La Cie 1.2G8 Internal Drive	199.
27056	MDS 88M8 SyQuest Cartridge	34.95
9054	MDS Internal 1G8 Hard Drive	299.95
15951	MDS SyQuest 200M8 Drive w/Cart	379.95
26948	Pinnacle RCD 5040 Recordable CD	995.
28736	Sony 3.5" HD Disks - 50 Pack	32.95
22801	SyQuest EZ135 Ext. SCSI Drive	199.95
7070	SyQuest 270M8 Cartridge	54.95

INPUT/OUTPUT

16451	Adesso PowerMouse	\$19.95
21197	Adesso TruForm Keyboard	89.95
25844	Advanced Gravis FireBird Joystick	69.
22658	Agfa Studio Scan IISI	749.
26278	Brother MFC-4000ML	849.
2373	CoStar LabelWriter XL	149.95
23075	Epson Color Stylus II	299.95
2499	GDT PowerPrint	99.95
22889	HP DeskWriter 600	199.95
27415	HP LaserJet 5LFS/PowerPrint/PrintExtras	579.
28520	HP Mac DeskWriter 680c	319.95
25696	Kensington Mouse in a Box	39.95
27299	Logitech TrackMan Marble for Mac	99.95
26748	MDS 1-Button Mouse	17.95
22799	MDS 105 Key Keyboard	39.95
16212	Mouse Systems MacPoint	24.95
26399	USTT Infinity 3 Toner Cartridge	138.95
24684	Visioneer PaperPort Vx	299.95

INTERNATIONAL CUSTOMERS

Please call 603-446-3333 or fax 603-446-7791. Additional charges & restrictions may apply.

OUR POLICY • VISA, MASTERCARD, AMERICAN EXPRESS, and DISCOVER cards. No surcharge. • Most products are covered by manufacturer's warranty against defects for at least 30 days from the invoice date. • All returns require prior authorization; please call for an RMA • We are not responsible for typographical errors. • Pricing and promotions are subject to change without notice. **Continental U.S.:** Shipping Charges: \$5 per order up to 10 pounds. On orders weighing 10 pounds or more, shipping is \$1 per pound. Please call for weight/shipping charge information. Barring events beyond our

control, all credit card orders phoned in weekdays by 3 a.m. ET will ship Airborne Express for delivery the next business day. Saturday delivery available to many areas upon request at no additional charge. Order all day Saturday thru noon Sunday for Monday delivery. Some areas require an extra day delivery. **AP0/FP0, International orders and Hawaii, Alaska, Canada, Puerto Rico & U.S. Virgin Islands:** Shipping may require additional time and charges. All other areas: Call 603 446 3333 or FAX: 603 446 7791 M-F 9 a.m.-5:30 p.m. ET.

©1996 PC Connection, Inc., Marlow, NH. MacConnection & the raccoon characters are registered trademarks of PC Connection, Inc. All other trademarks remain the property of their respective companies.

MacConnection®

FREE TECH SUPPORT • NEXT DAY DELIVERY • AWESOME SERVICE • CUSTOM SYSTEMS OVERNIGHT!

CAPTURE & SAVE

Capture images and store them with this EXCLUSIVE bundle: Iomega Zip Drive, 3 100MB Zip Disks and Connectix QuickCam! (grayscale version)

ONLY
\$299⁹⁵

29116

Bundle with:
Color QuickCam
\$399⁹⁵*

*price after
\$30 Connectix
rebate

29119



NEW LOW PRICE!



ONLY
\$149⁹⁵

SupraExpress External 288

23286

- Features 28,800 data and 14,400 fax speeds
- V.42bis data compression
- Includes microphone communications software, FAXcilitate fax software and CompuServe Information Manager software

Internet Solutions

CLARIS

ONLY

\$49⁹⁵



23869

- New version of Netscape Navigator 2.0!
- Also includes: Apple Internet Dialer; Claris Em@iler™ Lite; Fetch FTP software; Aladdin Stuffit Expander; NewsWatcher Usernet browser; SLIP and PPP software; NCSA Telnet emulation; QuickTime VR Player; Adobe Acrobat Reader; "Getting Started" guide and on-line help

ONLY

\$299

OL610e/PS OKIDATA PAGE PRINTER

Prints 6 pages per minute at 600 dpi output. Handles 4 different paper types!

NOW ONLY

\$699

SAVE
\$100

23538

26861 OL610e/PS
PagePrinter.....\$1099

Optima MiniPak 8000DAT

- 4GB/cortridge capacity
- Compact, lightweight design
- Industry-standard data formats

UP TO
8GB
CAPACITY

OPTIMA
TECHNOLOGY

\$1095

28225 MiniPak 8000DAT 4GB Drive
28222 MiniPak F8000DAT 8GB Drive..... 1349

FREE UPGRADE!

Adobe Buy Adobe PageMill now and receive a FREE

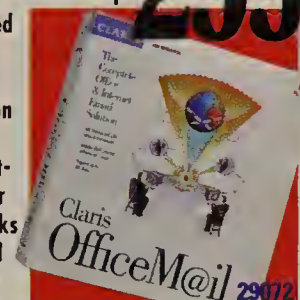
ONLY
\$99⁹⁵

upgrade to version 2.0 due out August '96! PageMill is the all-in-one page development tool for the World Wide Web in an easy-to-use word processor format.

24559

Everything you need to exchange e-mail across the room or around the world on the Internet!

- Runs over existing AppleTalk or TCP/IP networks
- Automated mail features enable you to sort, file, delete, and reply to messages automatically
- Includes Claris Em@iler 5-user software, server software and Internet email access via ClarisLink



29072



Boston Computer Society
names MacConnection
"Best All Around Company"
2 years in a row!

Berkeley Mac Users Group
awards MacConnection
"Best Mac Mail-Order
Company!"



EDUTAINMENT

13510	AEC FastTrack Schedule	\$169.95
24055	Best!Ware Mind Your Own Business	79.95
27666	Claris FileMaker Pro 3.0 Upgrade	99.95
29727	Intuit Quicken Deluxe 6.0 CD	39.95**
15070	Jian Bizplan Builder 5.0	79.95
16551	Microsoft Office for Mac 4.2 Upgd	279.95
16552	Microsoft Word 6.0 Upgrade	119.95
8010	Niles EndNote Plus	169.95
16548	Symantec ACT 2.5 Upgrade	49.95

24561	Adobe After Effects	\$649.95
24672	Adobe Illustrator 6.0	389.95
13109	Adobe Illustrator/Photoshop Bundle	599.95
22197	Adobe PageMaker 6.0	549.95
16661	Adobe Photoshop 3.04	569.95
25748	Alien Skin Black Box	89.95
25891	Caligary True Space 2	499.95
22165	Corel DRAW6 CD	449.95
27558	Corel Graphics Pack CD	99.95
3227	Deneba Canvas 3.5	299.95
1768	Deneba Spelling Coach Pro	49.95
28079	Director Multimedia 2.0 Studio	969.95
24535	Fractal Design Painter 4.0	359.95
20749	Fractal Design Poser	124.95
29023	FreeHand Graphics Studio 2	579.95
28103	Macromedia Director 5.0 CD	869.95
24014	Macromedia FreeHand 5.5	399.95
24509	MetaTools Kai's Power Tools 3.0	129.95
27498	MetaTools KPT Bryce II	169.95
16769	QuarkXPress 3.3.2	649.95
24579	Ray Dream Designer 4.0	99.95
24580	Ray Dream Studio	299.95
7784	Strata StudioPro 1.75 CD	899.95

13509	Broderbund MYST CD	\$44.95
13714	Delta Tao Eric's Ultimate Solitaire	34.95
23441	Edmark Thinkin' Things 3 CD	42.95
19027	Interactive Tech Manual StarTrek Next Gen	42.95
18168	Math Blaster: In Search of Spot CD	34.95

NEW VERSION!

Sim City 2000 Special Edition CD includes Sim City 2000, Urban Renewal Kit, Disaster Scenarios, over 100 new buildings from the 1900's to the 21st century, and an exclusive interview with Will Wright, the designer of Sim City 2000.

ONLY
\$44⁹⁵



28140

CALL TODAY
FREE
Catalog



800-800-3333

OR FAX YOUR ORDER
603-446-7791
896MW

Circle 145 on reader service card

MACWORLD August 1996 177

APS

Technologies

FAST REMOVABLE OPTICAL 230MB OF MO STORAGE



GREAT PRICE

\$449⁹⁵

External configuration

APS 230 MO

- ✓ The most reliable form of removable data storage
- ✓ New 4500 rpm drive for even better performance
- ✓ 2-year warranty

The 4500 rpm APS 230 MO combines excellent speed with the reliability of magneto-optical media. This removable media drive will accept either 128MB MO or 230MB MO data cartridges. Using a 230MB MO cartridge, you'll get 217MB of formatted capacity - 121MB with a 128 MB cartridge.

MacUser
LABS
★★★★

LOWEST PRICE EVER ON CD-R!

READ/WRITE CD-R

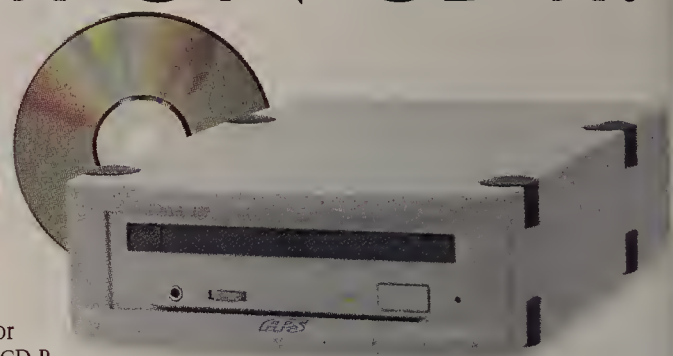
APS CD-R

- ✓ Uses CD media with 100-year shelf life
- ✓ Random access gives you fast retrieval

GREAT PRICE

\$599⁹⁵

External configuration



At the lowest price ever for 2x CD-R technology, the APS CD-R is a fantastic value for authoring, mastering or backing up to CDs. CD-R media costs less than 2¢ per MB and has an estimated 100-year shelf life. The APS CD-R has a giant 1MB cache buffer and supports all popular CD formats specified in the Orange Book Part II.

APS QIC & DAT BACKUP SYSTEMS

Model	Capacity/Awards	Internal	SR2000
APS HyperQIC™	8GB **** MacWEEK LABS 4.5	N/A	\$499 ⁹⁵
Travan 4 Conner QIC 3095 Mech.			
APS HyperDAT®	8GB	849 ⁹⁵	899 ⁹⁵
DDS-1 Compression Mech.			
APSHyperDAT® Pro	8GB	1049 ⁹⁵	1099 ⁹⁵
DDS-2 High Speed Mech.			

- 30-day money-back guarantee on all APS brand products. Your risk is the cost of shipping.
- Drive-for-Drive Repair or Replacement Warranty. APS will, at its discretion, replace or repair products found to be defective according to the terms of the product's warranty.
- Refused orders subject to 20% restocking fee.
- Listed capacities are formatted
- Actual data compression and tape capacity vary greatly depending on the type of data recorded, other system parameters and environment.
- Prices and specifications are subject to change without notice.
- All hard drives from APS Technologies come preformatted with Apple's System 7.0.1 software, and APS Technologies' APS PowerTools SCSI formatter/hard disk partitioner. You may need to install system software appropriate to your machine before use.
- Not responsible for typographical errors.
- Copyright © 1996 APS Technologies

APS MO DRIVES

Model	Capacity/Features	Awards	SR2000
APS 230MB MO	Up to 217MB	MacWEEK LABS 4.5	\$449 ⁹⁵
APS 2.6GB MO	4MB cache		1799 ⁹⁵

APS MEDIA SALE

3M

90M DAT tape	\$8 ⁴⁵
DAT cleaner	10 ⁴⁵
PD 650 media	45 ⁹⁵
230 MO cartridge	31 ⁹⁵

SyQuest®

SQ-400 (44MB)	\$39 ⁹⁵
SQ-800 (88MB)	51 ⁹⁵
SQ-310 (105MB)	54 ⁹⁵
SQ-327 (270MB)	61 ⁹⁵
SQ-2000 (200MB)	81 ⁹⁵



105299

74Min. CD-R Media

\$7⁹⁵

APS CD-ROM DRIVES

Model	Internal	SR2000
APS T 3701	6.7X-speed CD-ROM	\$249 ⁹⁵ \$299 ⁹⁵
APS PD4	4X CD-ROM/Optical	N/A 499 ⁹⁵
APS CD-R	Recordable CD-ROM	N/A 599 ⁹⁵
APS CD-R Pro	4X4 performance CD-R	N/A 1799 ⁹⁵

APS SYQUEST DRIVES

Model	Capacity/Awards	Internal	SR2000
APS SQ 5200	194MB MacWEEK LABS 4.5	\$339	389 ⁹⁵

Call for information about our ultra-high capacity drives, professional backup and server products.

MacWEEK



MW★★★★



APS TECHNOLOGIES

STORE MORE, SPEND LESS! INCREDIBLE 2.1 GB STORAGE

Call US
24 HOURS A DAY,
7 DAYS A WEEK



JUST \$399⁹⁵
Internal configuration

APS Q 2100

GREAT PRICE

Quantum®

- ✓ Excellent value with more than 2GB of reliable storage
- ✓ Uses MR heads and a PRML read channel
- ✓ 3-year warranty



As the storage demands of your applications and files continue to grow, look to the APS Q 2100 to handle your mounting storage needs. This 4500 rpm drive uses MR heads and an advanced PRML read channel to pack more than 2GB into a 3.5" low profile drive, giving you the extra space your computer needs.

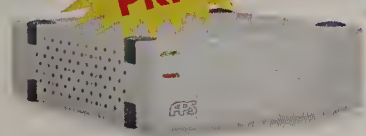
THE CAPACITY YOU'VE BEEN LOOKING FOR APS Q 3200

\$499⁹⁵
Internal configuration

GREAT PRICE

Quantum®

- ✓ Value leader at a convenient new 3GB capacity
- ✓ 4500 rpm mechanism
- ✓ Incorporates MR heads and a PRML read channel
- ✓ 3-year warranty



When 2GB isn't quite enough, but 4GB is too much, you now have another hard drive capacity option. The new APS Q 3200 uses MR heads and an advanced PRML read channel to provide a convenient 3GB of storage on a 3.5" low profile SCSI drive.

UNBELIEVABLE DEAL! 810MB

APS Q 840

JUST \$189⁹⁵
Internal configuration

Quantum®

- ✓ Our most affordable drive
- ✓ Low power requirements and low noise, great for internal use
- ✓ 3-year warranty



When your Mac's original hard drive is no longer adequate for your needs, it's time to upgrade to the APS Q 840. It formats to 810MB and is capable of sustained reads of 2.6MB per second and sustained writes of 2.7MB per second with seek and access times of 12.2 ms and 22 ms, respectively.

APS DESKTOP DRIVES

Model	Capacity/Awards	Internal	SR2000
APS Q 840 Quantum 840 Trailblazer	811MB MacUser 2D LABS ★★★★	\$189 ⁹⁵	\$259 ⁹⁵
APS Q 1280 Quantum Fireball II 1280	1222MB MacUser 2D LABS ★★★★	269 ⁹⁵	369 ⁹⁵
APS Q 2100 Quantum Fireball TM	2100MB MacUser 2D LABS ★★★★	399 ⁹⁵	499 ⁹⁵
APS I 2160 IBM Ultrastar ES	2063MB MacUser 2D LABS ★★★★	479 ⁹⁵	579 ⁹⁵
APS Q 3200 Quantum Fireball TM	3200MB MacUser 2D LABS ★★★★	499 ⁹⁵	599 ⁹⁵
APS ST 4200 Seagate ST 15230N	4094MB MacUser 2D LABS ★★★★	889 ⁹⁵	989 ⁹⁵



These products are performance-matched for optimal performance in the PowerPC environment.

APS HIGH-PERFORMANCE DRIVES

Model	Capacity/Awards	Internal	SR2000
APS MS 2000 Micropolis 4421	2000MB MacUser 2D LABS ★★★★	\$469 ⁹⁵	569 ⁹⁵
APS Q 2.0 Quantum Atlas XP32150	2050MB MacUser 2D LABS ★★★★	699 ⁹⁵	799 ⁹⁵
Fast/Wide available for an additional \$100.00			
APS MS 4.0 Micropolis 3243	4064MB MacUser 2D LABS ★★★★	899 ⁹⁵	999 ⁹⁵
Fast/Wide or AV available for an additional \$100.00			
APS Q 4.0 Quantum Atlas XP3430	4101MB MacUser 2D LABS ★★★★	899 ⁹⁵	999 ⁹⁵
Fast/Wide available for an additional \$100.00			
APS MS 9.0 Micropolis 1991	8669MB MacUser 2D LABS ★★★★	1899 ⁹⁵	2099 ⁹⁵
AV available for an additional \$100.00			

POWERBOOK DRIVES

Model	Capacity/Features	Drive Type	Internal
APS PB 230 MO Fujitsu	217MB	IDE	\$399 ⁹⁵
APS Q 1.08 Quantum Europa	1037MB 3800 rpm	Fast ATA2	429 ⁹⁵
APS I 1.2 IBM Travelstar DPRS-21215	1200MB 4900 rpm	SCSI-2	699 ⁹⁵

To receive an automated fax listing of all APS documents, call 800-374-5802 from any touch-tone telephone. Then call 816-920-4150 from a fax machine with a handset or fax modem and follow the instructions.

CALL FOR YOUR FREE
Early Summer 1996
CATALOG



Visa, MasterCard, Discover, American Express: No Surcharge
Same day shipping for personal checks (Restrictions apply)

Visit our Web Page at <http://www.apstech.com/> International Sales: (816) 920-4109

800-945-4920

Circle 62 on reader service card



30-day money-back guarantee on all APS brand products.

MACWORLD August 1996 179



MacWorld Magazine
World Class Award



MacUser Editor's
Choice Award



Consultants
Choice Award

REF. CODE: 286008

J&R COMPUTER WORLD

One Of America's Largest Authorized Apple Dealers

J&R SPECIAL • J&R SPECIAL • J&R SPECIAL • J&R SPECIAL

iomega

External 1GIG Jaz™ Drive

- Finally a 1 Gigabyte solution!
- Provides 1GB of disk space on each compact cartridge
- Portable—goes where you go • Auto-termination makes setup simple (determines location in the SCSI chain and terminates itself if necessary—automatically)
- Includes one cartridge (8ER JAZEXTSCSI)

extra 1-GIG cartridges... \$124.95/ea (BER MAC1GIGCART)
extra 5pack 1-GIG cartridges... \$499.95 (BER MAC1GIG5PAK)



NEW LOW PRICE

Removable Storage



iomega Zip™ Drive

- Works like a hard drive • Unlimited storage on inexpensive 100MB disks
- Portability and easy plug-and-play set-up • Comes with a SCSI cable and one 100MB removable disk

GREAT LOW PRICE

(8ER ZIP100SCSI)

Micranet 1GIG External Jaz Drive (MNT AV1000JAZE) \$549.99

Micranet 1GIG Internal Jaz Drive (MNT AV1000JAZI) \$579.99

Micranet Double 1GIG Jaz Drive (MNT SS2000JAZA) \$1149.99

CD-ROM Players

PHILIPS



Philips

8X CD-ROM Player

- 1.2MB per second transfer rate
- 195ms average access rate • 256K data buffer • Power save after 5min
- Caddyless, motorized disc loading tray • 2 year warranty

\$299.99 (PHI PCA80SC40)

Sany External 4X CD-ROM (SON CSD7611M) \$289.99

Micranet External 4X CD-ROM Kit (MNT ADVMM4X) \$389.99

Panasonic Portable 4X CD-ROM (PAN KXLD742) \$399.99

Recordable CD-ROM

PHILIPS



Philips CDD2000

2X Write/4X Read CD-ROM

- External Read/write CD-ROM player • Up-to 780MB capacity
- 706KB/sec read • 353KB/sec read/write • Corel CD creator, Cable, and two (2) blank CD-R discs

\$999.99 (PHI CDD2010/40)

Turtle Beach Internal 2Xwrite 4Xread (TBS 2040R) \$849.99

Micranet 2X Recordable CD-ROM (MNT MCDPLUS) \$1099.99

Sany 2X read/write CD-ROM (SON CSP211S) \$1099.99

Monitors

Panasonic



Panasonic PanaSync™ S17

- 17" Digital Color CRT Display
- 1,280 x 1,024 maximum resolution NI • MPR-II certified • 0.27mm dot pitch • DQ-QAF electron gun
- Power-saving function • 3-year parts & labor warranty

\$779.99 (PAN S17)

Portrait Pivot 1700 17" Monitor (PDL M1716-02) \$999.99

Sany GDM-17se-IIT 17" Monitor (SON GDM17SE-IIT) \$1069.99

Sany CPD-20sf-II 20" Monitor (SON CPD20SF-II) \$1799.99

Digital Cameras

Kodak



Kodak DC20

- Digital Science™ Camera
- Shirt-pocket size • 24-bit color
- 1MB storage • Focus-free lens with automatic exposure • 20-inch to infinity focus distance
- Includes software for Mac & PC

\$329.99 (KOD DC20)

Connectix Color QuickCam (CNM CQCM) AFTER \$30 REBATE \$199.99

Kodak Digital Camera 40 (KOD DC40) \$649.99

Kodak Digital Camera 50 (KOD DC50) \$949.99

Desktop Modems

U.S. Robotics



U.S. Robotics Sportster® 28.8K bps

- Fax/Modem
- Up to 115.2K bps throughput with hardware based V.42/MNP2-4
- 115.2K bps data compression • Built-in speaker • Software

\$189.99 (USR EXT288MAC)

Supra Express v.34 Fax/Modem (SRA 50-28XP-MC) \$159.99

U.S. Robotics Sportster®/Speakerphone (USR EX288MACVC) \$199.99

Global Village Telepart Platinum (GLV TELEPRPLTN) \$199.99

SyQuest Drives



SyQuest EZ230

- 230MB External SCSI Drive
- 230MB formatted capacity • Super fast back-up and retrieval
- 13.5msec average access time • Also reads 135 cartridges
- Includes one 235 cartridge

\$299.99 (SYQ EZ230EXT)

SyQuest® EZ135 Drive (SYQ EZ135EXT) \$199.99

SyQuest® 200MB Cartridge Drive (SYQ S914126) \$399.99

Micranet 200MB SyQuest® Drive (MNT ADV-SYQ200E) \$499.99

PNY MEMORY



for PowerBook 5300

4MB (PNY MM3750LLA4) \$169.99

8MB (PNY MM3750LLA8) \$299.99

16MB (PNY MM3750LLA16) \$599.99

for most Performa, LC, Centris & Quadra Series

4MB (PNY 4MEG-05) \$59.99

8MB (PNY 8MEG-02) \$99.99

16MB (PNY 16MEG-01) \$199.99

32MB (PNY 32MEG-01) \$399.99

for most Power Macs

8MB (PNY 8MEG-05) \$99.99

16MB (PNY 16MEG-05) \$199.99

32MB (PNY 32MEG-05) \$399.99

Video Cards



Miro

MiroMotion DC20

- Full screen full motion digital video editing system • Studio quality digitization • Compatible with all video standards • Full S-video with PCI technology • MPEG compression

\$899.99 (MRO MOTIONDC20)

ATI Xclaim GA 4MB True Color Board (ATI 4M8XCLAIM) \$449.99

Matrox 4MB MGA Millennium (MOX 4M8POWERMIL) \$399.99

Matrox 8MB MGA Millennium (MOX 8MBPOWERMIL) \$659.99

Scanners



Hewlett-Packard ScanJet 4P Color Scanner

- 24-bit one pass • 300 dpi optical/1200 dpi enhanced resolution
- 7.5-second B&W/1.5-second color scanning • Includes HP Picturescan & ScanJet copy utility software

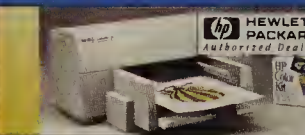
\$499.99 (HP C1139A)

Visianeer PaperPort VX (VIR PAPERVXMAC) \$299.99

Micratek E3 Color Scanner (MTK SCANE3) \$399.99

Hewlett-Packard ScanJet 3C (HP C2529A) \$899.99

Printers



Hewlett-Packard DeskWriter 660 Printer

- 600 dpi resolution • Resolution Enhancement Technology • Prints on 4 x 6" up to 8.5 x 14" paper
- Color printing with optional color kit • Up to 4-ppm in block, 1-ppm in color

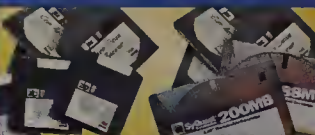
\$199.99 (HP C2185A)

Hewlett-Packard 660C (HP C2165A) \$259.99

Hewlett-Packard 680C (HP C4550A) \$309.99

Hewlett-Packard LaserJet 5MP (HP C3155A) \$999.99

Removable Media



1GIG Jaz Cartridge

1GIG Cartridge iomega (BER MAC1GIGCART) \$124.99 EA

Micranet (MNT CR1000JAZ) \$124.99 EA

iomega 100MB Zip Cartridge (BER MAC100MBDSK) each \$19.99

(BER MAC100MBTRI) 3 Pack \$49.99

(BER MAC100MBTEN) 10 Pack \$149.99

SyQuest® Cartridges

44MB (SYQ SQ400) \$39.99

88MB (SYQ SQ800) \$39.99

105MB (SYQ SQ105) \$49.99

135MB (SYQ SQ135) \$19.99

230MB (SYQ SQ230) \$29.99

200MB (SYQ SQ2000) \$59.99

Software • Software • Software • Software • Software • Software • Software



Inside Sports 1996 Swim Suit Issue

\$9.99

- Clip Art Warehouse ... \$7.99
- Jungle Book: Legend of Mowgli \$9.99
- Ozzies Travels: Destination Japan \$17.99
- Zurk's Alaskan Trek \$29.99
- You Don't Know Jack \$29.99
- Karma: Curse of the 12 \$29.99
- School House Rock \$29.99



Graphix Zone Bob Dylan Highway 61

\$39.99

- Intro to Archaeology \$29.99
- America's Funniest Home Videos \$29.99
- Top Secret Decoder \$29.99
- Dead Sea Scrolls Revealed \$29.99
- Astrology Source \$29.99
- Just Me & My Dad \$34.99
- Nine Month Miracle \$34.99
- Discovery Connections \$34.99



Maxis Sim City Classics Collection 2

\$29.99

- Personal Trainer SAT 2.0 \$34.99
- JumpStart Kindergarten \$34.99
- JumpStart 2nd Grade .. \$34.99
- Gizmos & Gadgets ... \$34.99
- Arcade America \$39.99
- Marathon 2: Durandal \$39.99
- Thinking Things Coll. \$39.99
- Creative Writer & Fine Artist \$39.99
- Dabbler 2.0 \$44.99



Apple Internet Connection Kit

\$49.99

- CD ToolKit \$49.99
- Info Genie \$49.99
- Conflict Catcher 3.1 \$59.99
- Virex 5.6 \$59.99
- Collaborator 2.0 \$59.99
- Works 4.0 Trade-Up \$69.99
- Ram & Speed Doubler \$79.99
- Filemaker Pro 3.0 Up \$89.99
- Typewriter Pro \$359.99
- Illustrator 6.0 \$369.99

Order Your Free Catalogue Now!



MAIL ORDERS: J&R Computer World Dept. MW0896
• 59-50 Queens Midtown Expressway • Maspeth, Queens NY 11378
CALL 1-800-221-8180 for shipping information. DO NOT SEND CASH.
All Major Credit Cards Accepted
Not responsible for typographical or pictorial errors. Some quantities may be limited. All merchandise brand new, factory fresh and 100% guaranteed!

To Order Toll Free and Receive a Free Catalogue
800-221-8180
24 Hours A Day, 7 Days A Week, Anywhere In The USA or FAX us at: 1-800-232-4432
Circle 282 on reader service card

J&R MUSIC WORLD

A Division Of J&R Computer World

SPECIAL PURCHASE

Denon DA-500

D/A Converter

• If you own a good CD player already (& it has either coaxial or optical outputs) & you want to upgrade to state-of-the-art sound, this is the most affordable way to do it • The ALPHA processing delivers ultra-smooth & detailed sound without any harshness • 20-bit D/A converter • 3-sampling frequencies for any type of digital input source

Mfr. Sug. Retail \$500.00

DENON



50% Off

\$249⁹⁹

(DNN DA500)

Camcorders



Sony CCD-TRV70

Hi8™ Handycam Vision™
• 12x-optical/24x-digital zoom • 4" SwivelScreen™ LCD color monitor • SteadyShot™ image stabilization • Hi-Fi stereo sound • 3-lux • 7-mode digital picture effects • Remote

\$1299⁹⁹ (SON CCDTRV70)

Panasonic PV-D406

• VHS-C, 16x optical/22x dig. zoom \$729.99

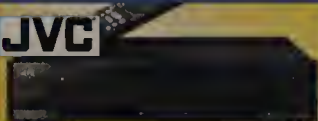
JVC GRA-X910

• VHS-C, 14x optical/28x dig. zoom \$749.99

Sony CCD-TR94

• 8mm, 12x optical/24x dig. zoom . . . CALL

S-VHS VCRs



JVC HR-S7100

S-VHS Hi-Fi Stereo Recorder
• VCR Plus+ with multi-system cable box controller • Jog/shuttle remote control with illuminated buttons • Random assemble & insert editing • 1-year/8-event programming

\$499⁹⁹ (JVC HRS7100)

RCA VR-721HF

• Hi-Fi Stereo, VCR Plus + . . . \$399.99

Panasonic AG-1980

• Hi-Fi Stereo, assemble-editing . \$1269.99

Sony SLV-R1000

• Hi-Fi Stereo, VCR Plus + CALL

Hi-Fi Stereo VCRs



Sony SLV-940HF

Hi-Fi Stereo VHS Recorder
• 4-heads • VCR Plus+ programming • Sony Shuttle control • Audio/Video insert edit • Flying Eroset™ Head • 8-event/1-month timer • Unified remote control

\$399⁹⁹ (SON SLV940HF)

Panasonic PV-4564

• 4-heads, VCR Plus + \$299.99

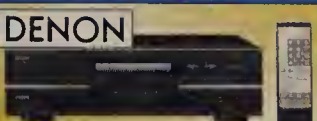
JVC HR-J630

• 4-heads, Hi-Fi Stereo CALL

Toshiba M-781

• 6-heads, Hi-Fi Stereo VCR Plus + \$449.99

CD Players



Denon DCD-3000

Compact Disc Player

• ALPHA processor for outstanding detail • Real 20-bit super linear converter • 8x oversampling • Optical & coaxial output • 20-track programming • Remote control

\$699⁹⁹ (DNN DCD3000)

Luxman D-322

• Heavy-duty suspension, remote \$299.99

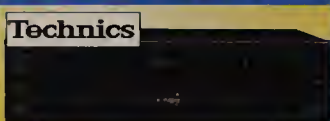
Dynaco CDV-1

• Tube output section, remote . \$559.99

Recordable Audio CD Player

• It's here, for information CALL

CD Changers



Technics SL-PD787

5-Disc CD Changer

• Change only 4 discs while o 5th plays • Full random play • 32-track programming • Repeat copable for single track or whole disc • MASH 1-bit D/A converter

\$159⁹⁹ (TEC SLP0787)

Magnovox CDC-74517

• 5-disc, Bitstream, remote . . \$149.99

Technics SL-MC400

• 110 + 1 disc, remote \$269.99

Aiwa DX-C100M

• 100-disc, remote \$299.99

Mini Audio Systems



JVC MXC770

Compact Component System

• 2-chassis design • 4 built-in amplifiers • 50 watts x 2 channels (main: 18 watts x 2, subwoofer: 32 watts x 2) • Remote with jog/shuttle dial • 7-disc CD changer • 2-way 3-speaker labyrinth port subwoofer system

\$499⁹⁹ (JVC MXC770)

JVC MXC550

• 6-CD, dual auto-rev. cassette . \$399.99

Aiwa NSX-V150M

• 50+1 CD, auto-rev dual cassette \$499.99

Yamaha CC-75

• 3-disc CD, auto-rev. cassette . \$699.99

Cassette/DCC Decks



Philips DCC900

Digital Compact Cassette Recorder

• Records & plays DCC tapes • Plays back analog cassettes using Dolby B & C • Auto-reverse • Headphone jack • Remote control

\$199⁹⁹ (PHI DCC900)

JVC TDW-709 Cassette deck

• Dual auto-rev. record/play . \$199.99

Aiwa AD-S950 Cassette deck

• 3-hd. Dolby S/B/C/HX-Pro . \$289.99

Teac V-8030S Cassette deck

• 3-heads, Dolby S/B/C/HX-Pro \$699.99

TV VCR Combos



Panasonic PV-M2065

20" Stereo TV/VCR Combo

• 4-head VHS Hi-Fi stereo VCR • Front A/V input • Program Director™ • Universal remote • On-screen display • Real time counter • Digital auto tracking

\$499⁹⁹ (PAN PVM2065)

Samsung CXB1312

• 13" Color TV/VHS recorder . \$269.99

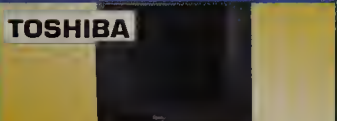
JVC TVC2026

• 20" Color TV/VHS VCR, VCR Plus \$449.99

Toshiba CV-27D48

• 27" Color TV/Hi-Fi stereo VHS VCR \$699.99

Televisions



Toshiba CF27E30

27" Stereo Color TV

• BLACKSTRIPE® II picture tube • Dark-tint screen • Extended Data Service • 1 A/V input • MTS with dbx®/SAP • 181-channel tuning • 10 watts audio output • Remote

\$399⁹⁹ (TOS CF27E30)

Sony KV-13TR28

• 13" Color stereo monitor CALL

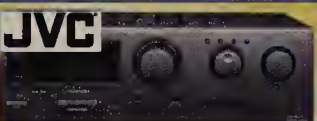
Panasonic CT-20G11

• 20" Color stereo television . \$249.99

JVC AV-35BP6

• 35" color stereo TV/monitor \$1099.99

Receivers



JVC RX817V

Audio/Video Receiver

• Stereo: 105 watts per channel • Surround: (front) 3 x 105 watts, (rear) 2 x 25 watts • Digital Acoustics Processor • Spectrum peak indicator • Front A/V input

\$349⁹⁹ (JVC RX817V)

Technics SA-EX100

• 100 watts/channel, remote . \$179.99

Technics SA-GX490

• Home Theater, 100 watts/ch . \$249.99

Technics SA-TX50

• THX A/V, 125 watts/channel CALL

Amps/Preamps



Proton AA-2120

Power Amplifier

• 120-watts per channel power amp • Dual mono configuration • High current • Stable to 2 ohms • Large VU meters

\$299⁹⁹ (PRT AA2120)

AudioSource AMP One

• Power Amp, 80 watts/channel . \$269.99

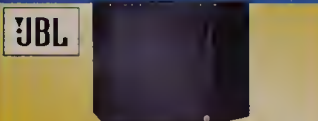
Luxman M-375

• Power Amp, 150 watts/channel \$799.99

Luxman C-383

• Preamplifier, MM/MC, remote \$799.99

Subwoofers



JBL PS120

Powered Subwoofer

• Built-in 100 watt amp • 12" woofer • Variable crossover and input gain • Magnetically shielded • 23-250Hz frequency response • Auto shut-off • Block finish

\$299⁹⁹ EA (JBL PS120)

JBL PS60

• 50 watts, 6.5" woofer . \$199.99 ea

JBL PS100

• 50 watts, 12" woofer . \$249.99 ea

Cerwin-Vega HT-12PWR

• 150 watts, 12" woofer . \$399.99 ea

Personal Stereo



Sony WM-FX511

Radio/Cassette Walkman

• World-wide digital tuner with 25 presets • Auto-reverse cassette with feather-touch controls • Dolby B • 3 position mego boss control • Anti-rolling mechanism

\$149⁹⁹ (SON WMFX511)

Panasonic RQ-XV30

• Digital tuner, Dolby B \$149.99

Panasonic RQ-SX1V

• Digital tuner, rechargeable . . . \$229.99

Aiwa HSJ-X849

• World-wide tuner, rechargeable . \$329.99

Boom Boxes



RCA RP-7935

CD/Cassette Recorder

• AM/FM stereo tuning • CD to tape dubbing • Shuffle/repeat play • Auto shut-off cassette • 4" speakers • Includes AC cord or runs on 6 D batteries (not included)

\$59⁹⁹ (RCA RP7935)

Sony CFD-8

• Stereo, CD to coss dubbing . . . \$74.99

Aiwa CSD-EX111

• Stereo, white finish \$99.99

Sony CFD-31

• Stereo, 8X sampling \$119.99

Shielded Speakers



Advent AV42

Amplified Speakers

• Twin 2-1/2" long throw drivers • Magnetically shielded for multimedia applications • 8 watts RMS • Volume & tone control • Includes AC adapter • Computer gray

\$129⁹⁹ PR (ADV AV42G)

Koss HD-50

• 4.5 watts, 9v AC adapter . \$39.99 pr

Sony SRS-PC40

• 3 watts, 2 inputs, adapter . \$79.99 pr

Audio Tech MMS557

• 20 watts, 2-way, white . . \$89.99 pr

Digital Cameras



Ricoh RDC-1

3X Zoom Digital Camera with Full Motion and Sound

• Removable media stores everything on PCMCIA cards • High-res stills • DM-1 2.5" color LCD monitor, 8MB PCMCIA cord and software

\$2495⁹⁹ (RICO RDC1/KIT1)

Casio QV-10A Plus

• 1.8" screen, 300 lines res . . \$479.99

Casio QV-30

• 2.5" screen, telephoto lens . . \$679.99

Minolta RD-175

• SLR, 1.75 million pixel res . . \$6699.99

Order Your Free Catalogue Now!



MAIL ORDERS: J&R Music World Dept. MW0896

• 59-50 Queens Midtown Expressway • Maspeth, Queens NY 11378

CALL 1-800-221-8180 for shipping information. DO NOT SEND CASH.

All Major Credit Cards Accepted

Not responsible for typographical or pictorial errors. Some quantities may be limited. All merchandise brand new, factory fresh and 100% guaranteed!

To Order Toll Free and Receive a Free Catalogue

800-221-8180

24 Hours A Day, 7 Days A Week, Anywhere In The USA or FAX us at: 1-800-232-4432

Circle 285 on reader service card

MACWORLD August 1996 181



Celebrating 10 Years in Business

Mac Systems & Peripherals • Sales & Leasing

0% DOWN
Business & Personal LEASING



7200 Work Station
PowerMac 7200/90, 16-500 CD
Apple 15" MultiScan
Apple Extended Keyboard
Sale Price.....\$1750



7600 Work Station
PowerMac 7600/120, 16-1.2 GIG CD
Apple 15" MultiScan Display
Apple Extended Keyboard
Sale Price.....\$3025



8500 AV System
PowerMac 8500/100 32-1000 CD
Apple 17" AV MultiScan Display
Apple Extended Keyboard
Sale Price.....\$4329

PowerMacs

*We Can Custom
Configure any System
to Your Spec's*

	Buy	Lease
7200/90, 16-500 CD	1275	43
7200/90, 16-1.5 Gig CD	1499	51
7200/120, 8-1.2GB CD	1699	57
7200/120, 16-1.2GB CD	1925	65
7600/120, 16-1.2GB CD	2550	86
7600/120, 48-2GB CD	3075	104
8500/120, 16-1GB CD	2895	98
8500/120, 16-2GB CD	3175	107
8500/120, 80-4.3GB CD	3995	135
8500/132, 16-1.2GB CD	3225	109
8500/132, 32-1.2GB CD	3399	115
8500/150, 16-2GB CD	3885	131
9500/132, 16-1GB CD	3670	124
9500/132, 16-2GB CD	3670	124
9500/150, 16-2GB CD	4289	145

Performas

Call For Unlisted Models

	Buy	Lease
Performa 5215 CD	1499	51
Performa 6290 CD	1729	58
Performa 6300 CD	1895	64

WorkGroup Servers

8150/110, 16-1.2 CD Dat	2599	88
7250/120, 16-1.2 CD Dat	2799	94
8550/132, 24-2 Gig CD	5395	182
9150/120, 16-2GB CD	3725	126

NetWork Servers

500/132, 32-2GB, CD, DAT	8975	298
700/150, 32-1GB, CD, DAT	9749	319

Radius•SuperMac
Sony•NEC•Apple
Phillips•Viewsonic
Nokia•CTX•Sanyo
Nanao•Hitachi...



Monitors

	Buy	Lease
Apple 14" Multiple Scan	289	10
Apple 15" Multiple Scan	389	11
Magnavox 17" MultiScan	625	21
Apple MultiScan 17" 1705	689	23
ViewSonic 17GS	675	23
Mag 17" Trinitron	745	25
Sony 17 SF2 MultiScan	869	29
AppleVision 1710	869	29
Portrait Pivot 17"	925	31
AppleVision 1710AV	989	33
NEC XV 17+ Monitor	789	26
ViewSonic 20G	1349	45
Apple 20" Multiple Scan	1699	57
Radius IntelliColor/20e	1725	58
RasterOps 21HR .22dpi	1989	67

PowerBooks

*Call for NEW
POWERBOOKS
Models*



	Buy	Lease
150 4-240	650	22
520 4-240	999	34
520C 4-240	1275	43
5300cs/100 8-500	1775	60
5300cs/100 16-750	2199	74
5300c/100 8-500	2199	74
5300c/100 16-750	2641	89
5300ce/117 32-1.1 GB	3785	128
Duo 2300c 8-750	2775	94
2300c 20/1000 MDM	3570	120
5300 8 Meg. Upgraded	175	6
28.8 PCMC Fax/Modem	249	8
Targus Carry Case	49	

Printers



	Buy	Lease
StyleWriter 1200	189	6
Portable Color SW 2200	135	5
Color StyleWriter 2400	235	8
Color StyleWriter 2500	375	13
Epson Color Stylus Pro	585	20
Epson Color Stylus Pro XL	1725	20
LaserWriter 4/600 PS	825	28
LaserWriter Select 360	1150	39
GCC Elite 600 ET Lite	1185	40
LaserWriter 16/600	2095	71
LaserWriter 12/600 w/Kit	5995	202
HP 560c	239	8
HP 855c	515	17
HP 5MP	995	34
HP 4MV	2699	91

Scanners

	Buy	Lease
PaperPort VX	275	9
Microtek E3	369	12
Microtek E6	525	18
UMAX Vista S6	529	18
UMAX Vista S12 Pro	875	30
HP ScanJet 4C	899	30
Epson ES 1200C	998	33
Agfa Arcus II w/transp.	1825	62
Microtek ScanMaker III	1925	65
Nikon SuperCool Scan	1925	65
UMAX PowerLook II Pro	2695	91

Video

	Buy	Lease
IMS TURBO (2 Meg)	325	11
IMS TURBO (4 Meg)	435	15
ATI Xclaim GA (4 Meg)	439	15
Thunder 30/1600	1139	38
#9 Imagine 128 (8 Meg)	999	34
EasyColor 24/1360	1299	43
ThunderColor 30/1152	1475	50
EasyColor 24/1600	1699	56
Thunder Color 30/1600	1899	64
Targa 2000 PCI (Full Ver.)	3475	117

Storage

	Buy	Lease
Iomega Zip Drive	189	6
SyQuest EZ135	199	7
Iomega JAZZ Drive	535	18
SyQuest 200	399	13
Apple 500 Meg 3.5"	99	3
Quantum 1 GB 3.5"	225	8
2.2 GB Quantum Atlas	499	17
4.3 GB Seagate	825	28
9 GB Micropolis	1875	63

DAT's from FWB

PCI JackHammer Card	365	12
HammerDAT8000	1345	45
Hammer DLT 100G	8795	296
HammerDLT Blank Tape	75	

Arrays from FWB

	Buy	Lease
SledgeHammer 2000	1325	44
SledgeHammer 4100	2495	84
SledgeHammer 8200	3350	113

RCD & Optical

Olympus Delta 230	459	15
Fujitsu Dynamo 230	469	16
FWB HammerCD w/Toast	1350	46
Pinnacle RCD 1000	1425	48
Yamaha CDR 100 w/Kit	1799	61
Pinnacle 1.3 GB Sierra	2175	73
Yamaha CDE 100 w/Kit	2279	77

SPECIALS

w/any purchase
Groliers Encyclopedia 5
Claris Works 29
MicroSoft Office 299

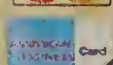
*Call for Unlisted
Mac Products • 2600
Items to Choose
From!*

FREE

CD Bundle
w/system purchase

LOW COST GE ON-SITE SERVICE PLANS AVAILABLE

DigiCore



**All Major Credit Cards • CODs
Wire Transfers • Corporate POs**

*Due to publication time constraints prices may vary •
Lease payments for business. Call for personal rates •
All Prices Reflect CASH (COD) DISCOUNT •
Possible Restocking Fee on Non-Defective Returns •
All Returns/Repairs require an RMA Number •
Lease payments based on 36 Months/Other terms are available •*

DigiCore Inc. 15500 Erwin St • Van Nuys CA 91411
<http://www.primenet.com/~digicore/>

Order Toll-Free

800-858-4622

International & Dealers

818-785-2800

E-Mail (AOL)

DigiCore7@aol.com

24 hr FaxLine

818-785-3100

E-Mail (WWW)

digicore@primenet.com

Circle 269 on reader service card



WHY PAY RETAIL? CDW® SELLS FOR LESS!™



Hot New Products!



UMAX®
Computer Corporation

SUPERmac™

\$900L
\$3995.00

CDW 70197

SuperMac S900L

Designed from the ground up to be the premiere Mac OS based computer available, the SuperMac S900L is the new generation of Mac compatible that delivers true workstation performance on a Mac OS platform.

- ✓ 150MHz PowerPC™ 604 CPU
- ✓ Dual processor upgradeable
- ✓ 16MB RAM standard, 1GB maximum
- ✓ 2GB internal SCSI-2 hard disk drive
- ✓ Internal 6.7X CD-ROM drive
- ✓ Includes IMS Twin Turbo-128M 4MB VRAM PCI graphics accelerator card
- ✓ Six internal PCI expansion slots

Also available:

SuperMac S900D **\$3095.00** CDW 70200

Call CDW today for details!

Multimedia Kits

NEW!

8X CD-ROM Kit

Includes 8X SCSI external CD-ROM drive, FWB's CDR ToolKit software, SCSI cable and terminator plus Bungie Marathon 2, Groliers Encyclopedia and A10 Attack software

\$289.73 CDW 68739

Input Devices



NEW!

Color Quick Cam

\$196.29*

CDW 67750

*After \$30 mail-in manufacturer rebate
Ends 7/31/96.



**\$30
Rebate!***

**PRACTICAL
PERIPHERALS.**

MacClass 288 V.34 MiniTower II

\$139.94*

CDW 48144

*After \$20 rebate!



**Advantage
External**
featuring
lomega Jaz
High-performance
1GB portable
data storage device



\$566.68

CDW 67762

1GB "Jaz" disk **\$116.38** CDW

Data Storage

ezflyer™ 230MB

**EZFlyer™
230MB**

The new Syquest EZFlyer™230MB removable cartridge drive features an auto-eject button, dust-free enclosure, power button and compatibility with EZ135 cartridges!

\$286.85

CDW 70187

EZFlyer™230MB Cartridge

\$29.69 CDW 70185



NEW

Visit our newly
redesigned web site!
www.cdw.com

CDW® sells for less and services you better!™

800-509-4239 (4CDW)

Turn to the
third page of
our ad for more
communications
values!

COMPUTER DISCOUNT WAREHOUSE™



TOP SELLING MACINTOSH SOFTWARE

INSIGNIA SOLUTIONS™ SoftWindows™ V3.0 and SoftWindows™ 95 for Power Macintosh™

Put thousands of Windows applications at your fingertips

SoftWindows V3.0 upgrade, CD\$67.02 CDW 68769

SoftWindows 95 upgrade, CD.....\$139.27 CDW 68770

SoftWindows V3.0 with CPU purchase \$183.20 CDW 67424



Adobe PageMill™ V1.0

The easiest way to create pages for the World Wide Web

ULTRA LOW
CDW® PRICE
\$88.65
CDW 61992

Apple® Internet Connection Kit V1.1

All-in-one solution for Internet connection

\$45.17 CDW 68942



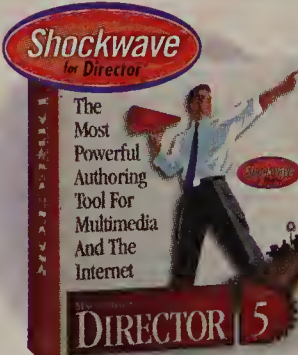
MACROMEDIA® with

Director 5

The most powerful authoring tool for multimedia and the Internet

Upgrade, CD ..\$374.37 CDW 66958

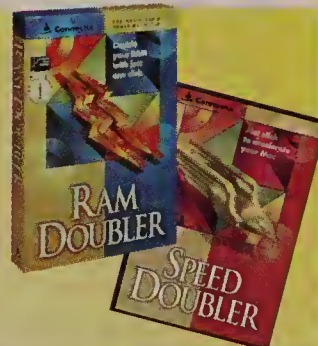
CD.....\$817.78 CDW 66957



PowerMac™ PowerPack

RAM Doubler
V1.6.1/Speed Doubler V1.1

\$73.48 CDW 64073



SYMANTEC.

Suitcase V3.0

The world's best-selling font manager

\$65.43 CDW 65638

* Owners of any previous version of Suitcase qualify for a \$30 mail-in manufacturer rebate.



Adobe	
After Effects V3.1	\$606.15
Dimensions V2.0	\$121.93
Illustrator V6.0 (3.5" + CD)	\$363.18
Illustrator V6.0 upg 3.X to 6.0 (3.5" + CD)	\$114.98
Illustrator V6.0 upg 3.X to 6.0 (CD only)	\$89.96
Illustrator V6.0 upg 5.X to 6.0 (3.5" + CD)	\$114.98
Illustrator V6.0 upg 5.X to 6.0 (CD only)	\$89.97
PageMaker V6.0 (3.5" + CD)	\$545.78
PageMaker V6.0 5 user pack	\$2163.90
PageMaker V6.0 upgrade	\$132.81
PageMill V1.0	\$88.65
Persuasion V3.0.2	\$241.34
PhotoDeluxe	\$81.20
Photoshop V3.0.5	\$545.78
Photoshop V3.0.5 vers upg	\$159.55
Premiere V4.2 CD	\$484.79
SiteMill V1.0	\$363.18
SiteMill V1.0 upg from PageMill V1.0	\$263.18
Streamline V3.0	\$121.93
Type Basics	\$121.33
Type Manager V3.8	\$39.18

Apple® Fun and Learning CD pack	\$12.70
Apple® Home Office Collection	\$26.77
Apple® Small Business Collection	\$35.63
Apple® System 7.5 upgrade	\$95.41
Apple® System 7.5 upgrade CD	\$95.18

QuarkXPress

V3.32
\$655.48

CDW 63937



Broderbund	
In the 1st Degree CD	\$48.04
Learn the Art of Magic CD	\$35.50
MYST CD-ROM	\$48.32
The PrintShop Deluxe CD Ensemble	\$71.79
Typewriter V2.0	\$123.34
Welcome To The Future CD	\$42.87

Caere	
Caere OmniPage Direct V2.0	\$57.93
Caere OmniPage Pro V6.0	\$459.02
Caere OmniPage Pro V6.0 upgrade	\$134.70

Casady & Greene	
Conflict Catcher 3	\$59.99
Conflict Catcher 3 comp upgrade	\$34.91
Conflict Catcher 3 vers upgrade	\$35.03

Clarisc	
Apple® Internet Connection Kit V1.1	\$45.17
Clarisc Emailer	\$55.14
Clarisc FileMaker Pro V3.0	\$179.14
Clarisc FileMaker Pro V3.0 upgrade	\$91.95
ClariscDraw V1.0	\$245.40
ClariscImpact V2.0	\$79.75
ClariscOrganizer V1.0v2 w/CLICKBOOK	\$44.53
ClariscWorks V4.0	\$116.54
ClariscWorks V4.0 CPU bundle	\$63.48
ClariscWorks V4.0 vers/comp upgrade	\$64.28

Connectix	
PowerMac PowerPack/RAM & Speed Doubler	\$73.48
RAM Doubler V1.6.1	\$54.63
Speed Doubler V1.1	\$55.45
VideoPhone (software only)	\$54.98

CLARIS FileMaker Pro V3.0 Version & competitive upgrade

\$91.95

CDW 63951



Corel	
Corel CD Creator	\$154.42
Corel Gallery 1	\$36.24
Corel Gallery 2	\$62.47
Corel Stock Photo Library 1	\$879.10
Corel Stock Photo Library 2	\$868.05
Corel Stock Photo Library 3	\$883.52

CA Cricket Graph III V1.53	\$89.83
Dataviz MacLink+PC Connection	\$115.25
Dataviz Virex V5.5	\$59.86
Deneba Canvas V3.5 + CD	\$251.83
DiskIt Direct V1.0	\$32.68

Edutainment	
A.D.A.M. Nine Month Miracle CD	\$36.24
A.D.A.M. The Inside Story CD	\$35.97
Berkeley After Dark V3.2	\$32.95
Bungie Marathon 2: Durandal	\$42.39
Bungie Marathon 2: Durandal	\$37.62
Davidson Math Blaster 1 CD	\$34.81
Davidson The Perfect Resume CD	\$34.81
Davidson WarCraft Orcs & Humans CD	\$45.60
Davidson Your Personal Trainer for SAT CD	\$34.80
Maxis SimCity 2000	\$34.05
Maxis SimCity Classic	\$19.80
ScruTiny in the Great Round	\$36.50
Virgin 7th Guest CD	\$31.80

Fractal Design	
Dabbler V2.0	\$41.92
Painter V4.0	\$331.95
Painter V4.0 upgrade	\$114.98

Poser V1.0	\$89.85
Sketcher V1.0	\$48.39

FWB	
CD-ROM ToolKit™ V2.0	\$49.88
Hard Disk Toolkit™ Personal V1.7.6	\$49.28
Hard Disk Toolkit™ V1.8	\$117.28
RAID Toolkit™	\$293.51

Farallon Timbuktu Pro V1.0	\$126.84
----------------------------	----------

Insignia	
SoftWindows 95 CD	\$321.60
SoftWindows 95 upg CD	\$139.27
SoftWindows for Performa	\$113.86
SoftWindows V3.0 CD	\$287.05
SoftWindows V3.0 CD w/CPU purchase	\$183.20
SoftWindows V3.0 upg	\$67.02
SoftWindows V3.0 upg CD	\$67.02

Intuit	
QuickBooks Pro V4.0	\$179.80
QuickBooks V4.0	\$111.19
Quicken Deluxe V6.0 CD	\$59.99
Quicken V6.0	\$44.53

Macromedia	
Director Multimedia Studio V2.0 CD	\$899.07
Director Multimedia Studio V2.0 upg CD	\$467.76
Director V5.0 CD	\$817.78
Director V5.0 upg CD	\$374.37
Extreme 3D CD	\$444.60
Extreme 3D comp upg CD	\$181.69
Fontographer V4.1	\$307.71
FreeHand Graphics Studio V2.0 CD	\$542.72
FreeHand Graphics Studio V2.0 upg CD	\$276.06
FreeHand V5.5 CD	\$378.33
FreeHand V5.5 vers upg V4.0 or earlier CD	\$138.33
FreeHand V5.5 vers upg V5.0 to V5.5 CD	\$74.84
SoundEdit 16 V2.0 CD	\$264.62
SoundEdit 16 V2.0 plus DECK II CD	\$346.27
xRes V2.0 CD	\$446.04
xRes V2.0 comp upg CD	\$186.34

MetaTools	
Kai's Power Tools 3 CD	\$111.41
KPT Bryce V2.0 CD	\$158.82
KPT Convolver V1.0 CD	\$111.41
KPT Power Photos I CD	\$111.41
KPT Power Photos II CD	\$111.41
KPT Power Photos III CD	\$113.97
KPT Vector Effects V1.0	\$111.41
Live Picture V2.5	

**Now
Utilities V6.0**
CD **\$77.12**
CDW 69389

\$629.24	Metrowerks
CodeWarrior Gold 9	\$303.27
Discover Programming for Macintosh	\$61.63
Discover Programming with Java	\$76.95

Microsoft	
Arcade V1.0	\$28.95
Bookshelf 96 CD	\$44.95
Cinemania 1996 CD	\$29.20
Encarta 1996 CD	\$44.94
Excel V5.0	\$296.94
Excel V5.0 upgrade	\$296.94
Flight Simulator V4.0	\$41.68
Office V4.2.1	\$449.03
Office V4.2.1 CD	\$449.31
Office V4.2.1 vers upg CD	\$265.72
Office V4.2.1 vers upgrade	\$265.86
PowerPoint V4.0	\$296.94
PowerPoint V4.0 upgrade	\$114.98
Project V4.0	\$421.73
Project V4.0 upgrade	\$134.11
Visual FoxPro V3.0 CD	\$465.90
Visual FoxPro V3.0 upgrade, CD	\$265.72
Wine Guide CD	\$29.20
Word V6.0.1	\$296.94
Word V6.0.1 vers upgrade	\$114.98
Works V4.0	\$45.13

NOW Software	
Now Contact V3.6 CD	\$59.97
Now Contact/Up to Date V3.6 bundle CD	\$63.15
Now Up-to-Date Web Publisher V1.0 CD	\$264.84
Now Utilities V6.0 CD	\$77.12

PRO CD	
Home Phone 1996 WIN/MAC CD	\$28.99
Select Phone 1996 Deluxe WIN/MAC CD	\$133.08
Select Phone 1996 WIN/MAC CD	\$84.28

Quark	
QuarkXPress V3.32 CD	\$655.48
Strata	
Instant Replay V1.0	\$84.62
Media Paint V1.1	\$403.97
Studio Pro BLITZ V1.75	\$851.43
Vision 3D V4.0	\$229.95

Symantec	
ACT! V1.0 for Newton	\$92.07
ACT! V2.5	\$148.18
Norton Utilities V3.2	\$94.27
SAM AntiVirus V4.0	\$64.17
Suitcase V3.0	\$65.43
Symantec Cafe	\$89.68

WordPerfect	
WordPerfect V3.5	\$119.44
WordPerfect V3.5, CD	\$119.44

COMPUTER DISCOUNT WAREHOUSE™

\$2.99
UPS ground
shipping on
any order
\$200 or less

NASDAQ

BUY WITH CONFIDENCE
CDW® IS A NASDAQ
TRADED COMPANY
TICKER SYMBOL CDWC
D & B rated 5A1
Duns 10-762-7952

Credit card charges are not submitted until time of shipment. For your protection, we ship only to your credit card's verified billing address. Freight is calculated as the carrier's actual freight charge plus insurance and packaging material. The cost of insurance is 0.35% (0.0035) of the order total. Packaging materials will not exceed \$4.00 for single package shipments or \$6.00 for multi-package shipments. Before returning any product, you must obtain an RMA number. Non-refundable returns are subject to a restocking fee. Software, chips and other electronic components are not returnable. Allow 10 business days for shipping when paying by personal check. All pricing subject to change. For all prices and products, CDW reserves the right to make adjustments due to changing market conditions, product discontinuation, manufacturer price changes or typographical errors in advertisements. All trademarks and registered trademarks are the sole property of their respective owners.



CDW® TELEPHONE HOURS

Sales
Monday-Friday 7am -9pm CDT
Saturday 9am-5pm CDT
Tech Support for Customers
Monday-Friday 8am-9pm CDT
Saturday 9am-5pm CDT

If you find a better price,
call CDW® before you buy

Fax: 847-465-6800

Sales: 800-509-4239 (ACDW)

CDW Computer Centers, Inc. • 1020 E. Lake Cook Road • Buffalo Grove, IL 60089

GET CONNECTED WITH A MODEM FROM CDW®



UMAX SUPERMAC COMPUTERS

S900L 150MHz/16MB/2GB hard drive 6.7XCD \$3995.00
S900D 150MHz/16MB/no hard drive 6.7XCD \$3095.00

MONITORS

NEC

M500 15" flat square w/speakers.....\$569.01
XV15+ 15" flat square.....473.13
XV17+ 17" flat square.....799.84
XE21 21" flat square.....1664.03
XP17 17" flat square.....1037.70
XP21 21" flat square.....1943.57

MAGNAVOX

CM2080 14" .29mm.....249.56
CM1215 15" .28mm.....369.77
CM4018 17" .28mm.....598.07
20CM64 20" .31mm.....1013.19

SONY

15sx 15" Trinitron.....399.15
15sfl 15" Trinitron.....484.45
17sfl 17" Trinitron.....775.83
17sell 17" Trinitron.....1075.60
20sfl 20" Trinitron.....1666.22
Multiscan TC 20" Trinitron.....3234.48

VIEWSONIC

15GA 15" PerfectSound monitor.....482.34
17GA 17" PerfectSound monitor.....678.57
GT770 17" Graphics Series .25mm.....822.78
PT770 17" Graphics Series .25mm.....845.99
GT800 20" Professional Series .30mm.....1547.28
PT810 21" Professional Series .30mm.....1747.87

RADIUS

PressView 17SR 17".....1987.82
PressView 21SR 21".....3202.97
PrecisionView 17 17".....942.19
PrecisionView 21 21".....2315.54

Graphics/Video Boards

ATI TECHNOLOGIES

Xclaim GA 2MB PCI.....269.58
Xclaim GA 4MB PCI.....421.93

DIAMOND TECHNOLOGIES

Javelin 3240XL 2MB PCI.....271.88
Javelin 3400XL 4MB PCI.....421.24
Javelin 2MB VRAM upgrade.....172.16

MATROX

MGA Millennium 4MB PCI graphics accelerator.....549.52
MGA Millennium BMB PCI graphics accelerator.....831.23
MGA Millennium 4MB VRAM upgrade.....255.08

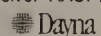
RADIUS

Thunder 30/1600.....1201.35
Thunder 30/1152.....800.00
ThunderColor 30/1600.....1988.99
ThunderColor 30/1152.....1584.87
PrecisionColor 8/1600.....492.50

NET WORKING

ALLIED TELESYN

Microcom Transceiver AAUI TO 10BT.....34.61
Microcom Transceiver AAUI TO 10B2.....34.67



Bluestreak NuBus adapter.....319.07
Bluestreak PCI adapter.....205.99
Bluestreak 100BTX Hub.....1561.86

FARALLON

Air Dock infrared connector.....64.68
Ether10-T Starlet/4 hub.....122.60
Ether10-T Starlet/8 hub.....144.68

Communications/Modems

FASTMAC™

FastMac™ 28.8 V.34.....137.98

GLOBAL VILLAGE

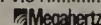
PowerPort fax/modems.....323.60
Mercury 19.2K/PowerBook 5XX.....327.27
Platinum V.34.....327.27

PowerPort PC Cards

PowerPort Gold PC Card.....169.38
PowerPort Platinum PC Card.....325.29
PowerPort Platinum Pro PC Card.....487.16
PowerPort Platinum Pro PC Card.....487.16

Teleport fax/modems

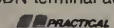
TelePort Gold II 14.4K.....104.71
TelePort Platinum V.34.....194.73



28.8K cellular-capableCruiseCard with XJACK.....289.66



Montana 28.8K cellular/pager PC Card.....252.09
Mariner 28.8K/LAN cellular/pager PC Card.....419.50
Lifestyle 28.8 external.....177.93
Power 28.8 external.....237.04
BitSURFR Pro ISDN terminal adapter.....353.80



14.4 external mini-tower w/fax.....79.05
28.8 V.34 external mini-tower w/fax.....159.94
MacClass PCMCIA 14.4.....149.69
MacClass PCMCIA 28.8.....264.78

SUPRA

SupraExpress 14.4 Plus.....94.89
SupraExpress 288.....141.13
Simple Internet 288.....148.19
SupraFAXModem 288 V.34.....193.74



Mac&Fax Sportster 14.4.....76.61
Sportster 28.8 V.34.....184.45
Sportster Voice.....212.13
Courier V.Everything.....363.19
Courier I-modem.....632.84

Storage Systems

CD-ROM DRIVES

Hi-Val 4X SounTastic CD-ROM Kit.....183.34
Hi-Val 8X SounTastic CD-ROM Kit.....289.73
MicroNet 4X CD-ROM Kit with 5 titles.....283.10
MicroNet 4X CD-ROM Kit with 10 titles.....356.57
MicroNet 4X CD-ROM Kit with 12 titles.....355.66
NEC MultiSpin 6XE.....335.65
Panasonic 4X Portable for PowerBooks.....398.78

FWB

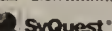
HammerCD 2X CD-ROM recorder.....1279.32
HammerCD 4X CD-ROM recorder.....1882.36
HammerJaz 1000 Solo.....662.56
HammerJaz 1000 PCI.....939.34
PocketHammer 4100FMF.....1758.22
PocketHammer H2000PE.....1032.42

iomega

Zip drive 100MB SCSI external.....199.00
100MB Zip disk.....19.00
Jaz Drive 1GB SCSI-II external.....599.00
1GB Jaz disk.....124.00

MicroNet

Advantage 1GB drive featuring "Jaz" external.....566.68
Advantage 1GB "Jaz" disk.....116.38



EZFlyer 230MB external.....286.85
EZFlyer 230MB cartridge.....29.69
EZ135 external SCSI.....199.99
135MB EZ135 cartridge.....19.45

Magnetic media

88MB SyQuest cartridge, 5yr.....47.52
200MB SyQuest cartridge, 5yr.....67.69
270MB SyQuest cartridge, 5yr.....48.75

Need more disk space? CDW also carries Conner, IBM, Maxtor, Micropolis and Seagate SCSI hard drives. Call for details

Input Devices

AGFA

Arcus II with full version Adobe Photoshop.....1995.00
StudioScan IISI.....698.32

ALPS

Portable GlidePoint.....39.82
Desktop GlidePoint.....69.84
GlidePoint Keypad.....109.42
GlidePoint Keyboard.....115.48



PowerMouse.....19.20
Soft Touch Plus extended keyboard.....47.92
Tru-Form extended keyboard.....84.76
Tru-Form extended keyboard w/poiner.....94.18

CONNECTIX

VideoPhone w/Quick Cam.....138.49
QuickCam (grayscale) digital video camera.....96.95
Color QuickCam digital video camera.....226.29

EPSON®

Action Scanning System II.....429.67
ES-1000C color flatbed scanner.....737.82
ES-1200C color flatbed scanner.....947.43
ES-1200C ProMAC color flatbed scanner.....122.02

Logitech

Cordless Mouse Man.....69.56
TrackMan Marble.....86.05
TrackMan Live!.....118.54

Microtek

ScanMaker 35T 35mm film scanner.....684.43
ScanMaker E3.....379.77
ScanMaker E6.....556.49
ScanMaker E6 Pro.....737.82
ScanMaker III w/trans adapter.....1902.70

NIKON

Super CoolScan film scanner.....1943.58
LS-20 Super CoolScan II.....1165.65
Coolscan film scanner.....1307.71
AX-1200 Scantouch flatbed scanner.....977.35
LS-4500AF multi-format film scanner.....7849.86

POLAROID

SprintScan film scanner.....1553.32

RELISYS

Scorpio Infinity.....401.52
Taurus Infinity.....581.49

UMAX®

Vista-S6 SOHO.....389.23
Vista-S6 MACLE2.....475.64
Vista-S6 MACPRO2.....588.35
Vista-S12 MACLE2.....756.82
Vista-S12 MACPRO2.....838.53

VISIONEER

Paper Port VX.....274.94
SCSI Adapter for PaperPort VX.....63.48

Printers

EPSON®

Stylus Color II.....299.00
Stylus Color Pro.....499.00
Stylus Pro XL.....1799.00



HP DeskWriter 340 Portable Inkjet Printer.....293.84
HP DeskWriter 600 Printer.....234.39
HP DeskWriter 855Cse Printer.....499.00
HP DeskWriter 1600CM Printer.....1962.07
HP LaserJet 5MP Printer.....1032.91



microLaser 600.....695.69
microLaser Pro/8.....1107.16
microLaser PowerPro/12.....1362.58

Simple Technology memory upgrades

Power Mac 9500 8500 7600 7500 8MB.....136.00
Power Mac 9500 8500 7600 7500 16MB.....337.70
Power Mac 8100 7100 6100 8MB.....202.64
Power Mac 8100 7100 6100 16MB.....389.88
Power Mac 8100 7100 6100 32MB.....787.38
Quadra/Centris 610 Performa 630/631 4MB.....63.60
Quadra/Centris 610 Performa 630/631 8MB.....201.23
Quadra/Centris 610 Performa 630/631 16MB.....411.60
LaserJet 4M Plus 4MB.....102.48
LaserJet 4M Plus 8MB.....201.23
LaserJet 4M Plus 16MB.....411.60

If you don't see it, CALL!
CDW carries the complete Simple line-up

PRACTICAL PERIPHERALS MacClass 288 V.34

MiniTower II

High-speed, high-performance communications for Macintosh®

- ✓ 28.8K bps data (V.34 and V.FC)
- ✓ 14.4K send receive fax ✓ V.42 error control, V.42bis data compression
- ✓ Includes Macintosh serial cable and software ✓ Lifetime limited warranty

\$139.94*

CDW 48144

* After \$20 mail-in manufacturer rebate. Offer valid through August 31, 1996.



\$20 REBATE!



U-Robotics Sportster 28.8 for Macintosh

Sportster reliability and economy, now with 33.6K bps support

- ◆ True V.34 (28.8K bps) and 33.6K bps!
- ◆ 14.4K bps send/receive fax ◆ V.42/MNP 2-4 error correction ◆ V.42bis/MNP 5 data compression ◆ Up to 115K bps data throughput ◆ 7 LED status lights ◆ Built-in speaker with volume control ◆ Includes MacComCenter™ fax software
- ◆ 5 year warranty, made in USA

\$184.45

CDW 61506



Teleport Platinum 28.8K bps V.34 faxmodem

The best choice for maximum performance

Loaded with features and backed up by a 5-year warranty, Global Village's Teleport Platinum is the premier choice for Internet and business connectivity.

- ◆ Data: V.34 (28.8K bps) ◆ Fax: 14.4K bps send and receive ◆ Features Flash ROM for easy feature upgrades! ◆ Included software: Power Macintosh native GlobalFax™ V2.5, GlobalFax OCR, ZTerm and America Online

\$194.73

CDW 52875



MOTOROLA BitSURFR Pro ISDN terminal adapter for Macintosh

Professional high-speed digital communications for your office or home

BitSURFR Pro is a terminal adapter for the high-speed, digital ISDN telephone service. This device features two analog POTS ports plus Multilink PPP, AIMux and bonding support for 128K bps connections. Ideal for the office or work-at-home users, BitSURFR Pro is an all-in-one combination of hardware and software ready to connect your MAC, telephone, analog modem and/or fax machine to ISDN.



\$353.80

CDW 67525

CDW® sells for less and services you better!™

800-509-4239 (4CDW)

NEW!

Visit us on the Internet!

- Order products
- Special Deals
- Enter to win a PowerTower 180MHz System!

<http://www.expressdirect.com>

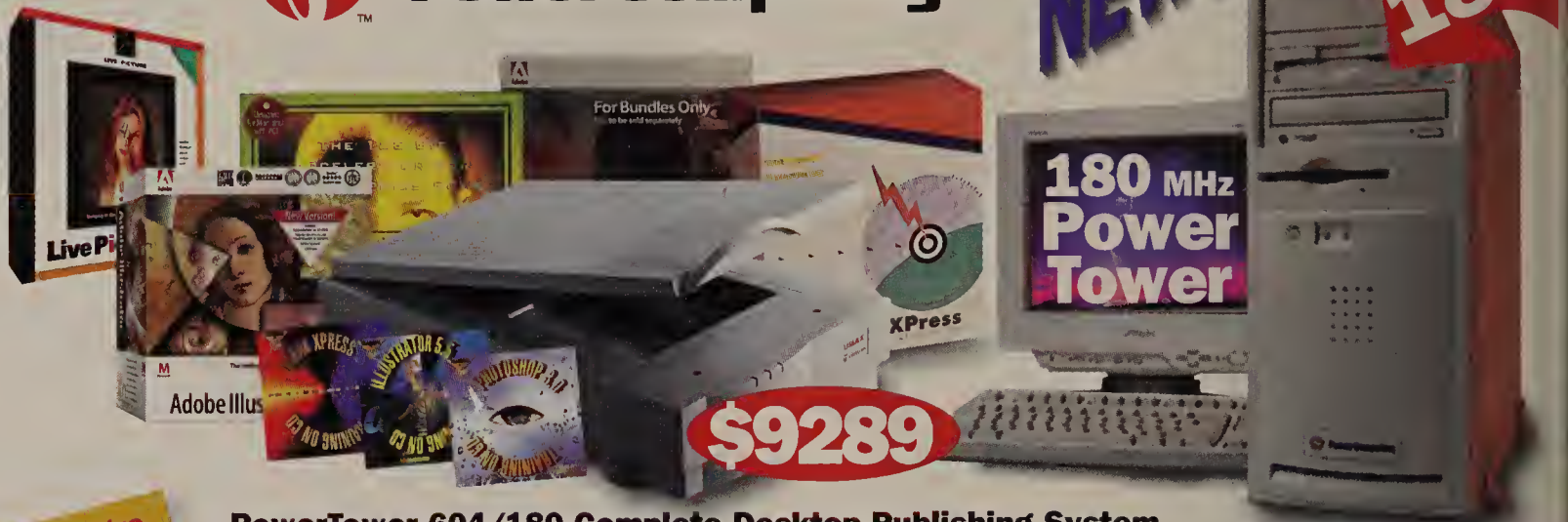
New Faster



PowerComputing

NEW!

180MHz



\$9289

PowerTower 604/180 Complete Desktop Publishing System

- PowerTower 604/180 with
- 32MB of RAM, 512k Level 2 cache
- 2GB AV HD & 4x CD-Rom Drive
- 3 PCI expansion slots
- Imagine 128 4MB graphics card
- Extended Keyboard
- 17" Trinitron Monitor
- QuarkXpress 3.32
- Adobe Illustrator 6.0
- UMAX S12; 24-bit color, 1200dpi scanner with Adobe Photoshop & OmniPage OCR
- Live Picture 2.5
- Includes special training material for all software

Complete system price \$9,289

Lease for only \$314/month*

We've got the entire Power Computing line Call for Custom Configurations!



Mac OS

NEW!

jaz™
MicroNet



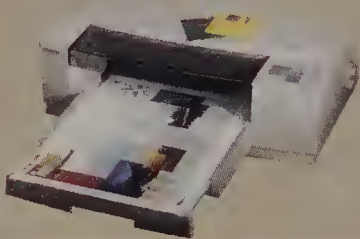
MicroNet Jaz Drive
Featuring Iomega Jaz with 12ms access time. Includes formatted 1GB Jaz disk

\$619

EPSON

\$1799

Epson Stylus Pro XL
Prints up to 12.5" x 18" full bleed in photo quality color



RASTEROPS™
HITACHI



\$1999

Hitachi SuperScan MC21

21" flat square CRT .28 dot pitch Black Matrix invar. Supports resolutions up to 1600 x 1200 at 85Hz

15" SuperScan MC15	\$459
17" SuperScan MC17	\$999
20" SuperScan MC20	\$1499
New 21" SuperScan MC21HR	\$2199



MOTOROLA

Bit-Surfer Pro \$399

- With EarthLink Software
- Over four times the speed of the fastest analog modem—with ISDN line speeds of 128,000 bps!
- Two analog device ports
- Everything you need for ISDN in the box

28.8 V.34 Fax/Modem \$199

FWB
incorporated

NEW PCI JackHammer

\$399

NEW Hammer CD-R 2X

\$1359

We carry the full line of FWB products including Fast & Wide Disk Arrays, DATs and more. Call!

radius

PressView 21 SR, PressView 17 SR, ThunderColor PCI cards and more. Call!

The Express Advantage:



Expert Advice

We know our products & understand your applications. No order-takers here.



Business Leases

Fast, Easy Lease Approvals!

\$300

Free Tech Support

Call toll-free for as long as you own your Mac.



Fast Delivery

With FedEx & UPS, we ship promptly, based on availability.



Top Products

We carry only the best products available that we've evaluated for quality.



4-Year On-site Extended Warranties.

Apple, the Apple logo, Macintosh, Macintosh Quadra and Power Macintosh are trademarks of Apple Computer, Inc. Prices are subject to change without notice. Mac pricing based on purchase of CPU with monitor. "Stand Alone" CPUs may be more. All returned orders may be subject to a 15% restocking fee plus return shipping. Call for RMA before returning. Software, unless defective, cannot be returned after it has been opened. *Lease prices based on 36 month term with 10% purchase option. Call for complete details.

Power Macs!



Power Macintosh 7600/120

16MB RAM, 1.2GB HD, CD-ROM drive, Level 2 cache.

Monitor & keyboard sold separately.

• Add 15" Trinitron Display

• Extended Keyboard

Complete system price \$3,499

Lease for only \$119/month*



Power Macintosh 8500/150

16MB RAM, 2GB HD, CD-ROM drive, Level 2 cache.

Monitor & keyboard sold separately.

• Add 17" Trinitron Display

• Extended Keyboard

Complete system price \$5,579

Lease for only \$189/month*



and Peripherals



UMAX
The Magic of Color™

\$749

Vista-S12

33-bit, 600 x 1200dpi up to 9600dpi with UltraView

Vista S6e \$439

Vista S12 \$749

New PowerLook II with Pro Bundle \$2495

New Mirage with Pro Bundle \$6895

Choose your software bundle—

Pro Bundle: Full Photoshop & KPTse \$189

LE Bundle: Photoshop LE & OCR \$69



\$829

MAG Technitron DX17T

17" Trinitron with super fine .25mm CRT. Supports resolutions up to 1152 x 870. (Viewable 16.2")



\$299

8X CD-ROM Kit

Includes 8X external CD-ROM Drive, FWB's CD Toolkit, Bungie Marathon 2, Grolier's Encyclopedia and A-10 Attack software!

Call to receive a FREE catalog!

1-800-765-0020



We stock a complete line of quality products from all of the above manufacturers & more.

1-800-765-0020

Order Toll Free M-Th 8am-7pm, Fri til 6pm, Sat 10am-2pm (CST) • 24 Hour Fax • Customer Service Hotline: 1-800-236-3059



International

ORDERS SHIPPED DAILY

Fax: 312.244.3081

Phone: 312.244.3000

Internet Address

<http://www.expressdirect.com>

express direct

2720 North Paulina Avenue
Chicago, Illinois 60614

MAC BARGAINS

Buy with Confidence Online from MAC BARGAINS.

- **NEW!** To place an order, e-mail to mac.bargains@mzi.com
- **NEW!** For detailed product information, e-mail to mac.bargains.info@mzi.com


• Over 2500 products in stock

Great Deals!



As Low As \$1995

Power Computing is here!
Mac-compatible, PowerPC™ performance for less!



Only \$99⁹⁸

Prometheus Cyberport 28.8

- Automatically adjusts to line conditions to transmit at speeds up to 28,800 bps
- Incorporates industry-standard ITU-T V.34
- V.42/MNP-4 error control and V.42bis/MNP-5 data compression - further minimizes online costs
- Exchange mail with people around the world
- Easy to install - you'll be up and running in minutes
- For more information, e-mail keyword **PROM288**

Prometheus #90235

Okidata OL410e/PS



Only \$489

- Crisp 600 dpi-class output
- Adobe PostScript Level 2 software for superior results
- 35 PostScript and two Multiple Master fonts
- Compact size fits virtually any desk space
- Exclusive Adobe Memory Booster™ technology gives you 5MB of effective memory saving the cost of expensive memory upgrades
- Macintosh, DOS and Windows compatible out of box
- For more information, e-mail keyword **C2KQUAD**

Performantz #93689

Adobe Systems		
89675	Acrobat Exchange 2.1.....	\$121.98
06263	Dimensions V2.0.....	\$121.98
95314	Fetch V1.2 Single-User.....	\$93.98
06994	FrameMaker V5 Upgrade.....	\$198.98
03582	FrameMaker V5.....	\$549.98
88205	Illustrator V5.0 to V6.0 Upgrade CD.....	\$95.98
88206	Illustrator V6.0 CD & 3.5".....	\$364.00
91255	PageMaker 6.0 Upgrade.....	\$135.98
91256	PageMaker V6.0 Mac/PowerMac CD & 3.5".....	\$545.00
88414	PageMill 1.0.....	\$95.66
04042	Photoshop 3.0.5.....	\$544.98
95341	Photoshop 3.0.5 Upgrade.....	\$157.00
04670	Premiere V4.2.....	\$484.98
03971	Streamline 3.1.....	\$122.98
92218	SuperPaint Deluxe 3.5.....	\$68.98
03497	Type Manager 3.8 PowerMac.....	\$38.98
03950	Type On Call 4.1.....	\$42.98
Aladdin		
05827	StuffIt Deluxe 3.5.....	\$69.98
Alsoft		
00618	DiskExpress II 2.2.....	\$42.98
04543	Master Juggler 1.9.....	\$42.98
Avid Technology		
98489	Elastic Reality for Power Mac.....	\$219.98
03552	Avery MacLabel Pro.....	\$45.30
Best!Ware		
04712	MYD8 Accounting V6.0.....	\$74.98
99042	MYD8 Accounting V6.0 w/Payroll.....	\$132.98
Coere		
05161	DmniPage Direct V2.0.....	\$58.11
91304	DmniPage Pro V6.0 Upgrade.....	\$145.98
Cosody & Greene		
91300	Conflict Catcher 3.....	\$59.00

PowerComputing

#86611	PowerWave 604/150 8/2G8 CD Tower.....	\$3845.00
#86600	PowerWave 604/150 8/1G8 CD Tower.....	\$3545.00
#86601	PowerWave 604/132 8/1G8 CD Tower.....	\$3245.00
#86602	PowerWave 604/150 8/1G8 CD Desktop.....	\$3195.00
#86603	PowerWave 604/120 8/1G8 CD Desktop.....	\$2545.00
#86631	PowerCenter 604/120 8/500M8 CD Low Pro*.....	\$1995.00
#86632	PowerCenter 604/120 8/500M8 CD Desktop*.....	\$1995.00
#86633	PowerCenter 604/132 16/1G8 Desktop*.....	\$2495.00
#86604	Power Computing Stargate Riscercard*.....	\$249.98

Claris		
18052	ClarisDraw.....	\$179.98
93424	ClarisWorks V4.0.....	\$117.98
92638	ClarisWorks V4.0 Ver/Comp Upgrade.....	\$64.98
88830	FileMaker Pro V3.0.....	\$179.98
88829	FileMaker Pro V3.0 (Ver/Comp Upgrade).....	\$94.98
06525	MacWrite Pro V1.5.....	\$54.98
18051	Organizer for Mac.....	\$45.98

Connectix		
05646	PowerBook Utilities.....	\$53.98
96785	RAM Doubler v1.52.....	\$53.98
90375	Speed Doubler.....	\$53.00
90149	RAM/Speed Doubler 8ndl.....	\$75.00

Corel		
95331	Corel GALLERY 1.....	\$31.98



Only \$89⁹⁸ #86011

Connectix RAM Doubler, Speed Doubler and Conflict Catcher bundle

91628	Corel GALLERY 2.....	\$63.98
92234	Corel Stock Photo Library 1.....	\$889.98
91276	Corel Stock Photo Library 2.....	\$889.98

00203	Cricket Graph III.....	\$84.98
-------	------------------------	---------

Dontz		
04722	Diskfit Pro V1.1.....	\$68.98
02586	Retrospect V3.0.....	\$134.94
04194	Retrospect w/ Remote 10-Pack.....	\$259.98

Dotowatch		
02077	Vlrex V5.6.....	\$59.45

Dotoviz		
96907	MacLink Plus/PC Connect 8.0.....	\$113.98
96908	MacLink Plus/Translators Pro 8.0.....	\$93.98
Delrino		
97921	Delrina Fax Pro for Mac.....	\$52.45
DeltoPoint		
04805	DeltaGraph Pro 4.0.....	\$124.98
Entertainment		
99236	7th Guest, The-Virgin.....	\$41.98
88389	A-10 Attack CD-Rom.....	\$47.98
06848	Civilization-Microprose.....	\$29.98
91005	Dark Forces-LucasArts.....	\$49.98
92035	DDM II-GT Interactive.....	\$49.98
96284	Marathon-8ungle Software.....	\$37.98
88450	Marathon 2 Durandal.....	\$44.98
97733	MYST-8roderbund.....	\$49.98



Only \$157

Photoshop 3.05 Upgrade
#95341

93543	Night Trap-Acclaim.....	\$47.98
00473	PGA Tour Golf II-Electronic Arts.....	\$37.98
94563	Rebel Assault CD-RDM.....	\$27.98
92047	Sim City 2000 Collection CD.....	\$56.98

Forollon		
96800	Timbuktu Pro Single Pack.....	\$125.98
96802	Timbuktu Pro 10-Pack.....	\$629.98
96801	Timbuktu Pro Twin-Pack.....	\$179.98

Fractal Design		
98082	Fractal Design Dabbler 2.....	\$43.98
00665	Fractal Design Painter 4.....	\$332.28
93967	Fractal Design Painter 4 Upgrade.....	\$119.49
91289	Fractal Design Poser.....	\$89.76

GDT Software		
00642	PowerPrint 3.0.....	\$89.98
94262	StyleScript.....	\$89.98

90060	IdeaFisher V6.0.....	\$49.98
-------	----------------------	---------

Globolink		
95417	French Assistant.....	\$47.98
95416	German Assistant.....	\$47.98
95415	Italian Assistant.....	\$47.98
95418	Spanish Assistant.....	\$47.98

Insignio		
03664	Access PC V3.0.....	\$79.98
06786	RapidCD.....	\$44.98
98475	SoftWindows 3.0 for Power Mac CD-ROM.....	\$287.00
89308	SoftWindows 3.0 for Power Mac upgrade CD.....	\$74.98
94287	SoftWindows for Mac.....	\$269.98

Intuit		
93222	QuickBooks 4 for Mac.....	\$122.98
89653	QuickBooks Pro for Mac.....	\$184.98
89685	Quicken Deluxe CD 6.....	\$59.98
04230	Quicken 6 for Mac.....	\$41.98

JIAN		
04257	8izPlan8uilder 5.0.....	\$78.98
01045	EmployeeManualMaker 3.0.....	\$91.98
06827	Publicity Builder 2.0.....	\$84.98

Kent Morsh		
94266	Folderbolt Pro.....	\$88.98
89686	Folderbolt Pro/NightWatch II 8ndl.....	\$119.98

Leader Technologies		
05690	PowerMerge 2.5.....	\$74.98

Mocromedio		
88684	Deck II v2.5.....	\$299.98
92266	Director Multimedia Studio 2.0.....	\$949.98
86007	Director Multimedia Studio 2.0 Upgrade.....	\$498.98
88726	Extreme 3D.....	\$459.98
04537	Fontographer V4.1.....	\$307.98
88749	FreeHand 5.5 CD.....	\$375.00
87152	FreeHand 5.5 Competitive Upgrade CD.....	\$148.98
87150	FreeHand 5.0 to 5.5 Upgrade CD.....	\$78.98
92290	FreeHand Graphic Studio 2.0.....	\$574.98
88730	Macromedia Director 5.0 CD.....	\$789.98
95291	Macromedia Director 5.0 Upgrade CD.....	\$388.98
97770	SoundEdit 16 CD.....	\$278.98

Moinstoy		
01159	MacFlow 4.0.....	\$199.98
93218	Plan and Track.....	\$169.98

MetoTools Software		
06668	Kai's Power Tools V3.0.....	\$110.98
95335	KPT 8ryce 2.0.....	\$174.98
92243	KPT Convolver 1.0.....	\$114.98
91258	KPT Vector Effects.....	\$114.98

Metrowerks		
92853	CodeWarrior 8.0 Bronze.....	\$1
94281	CodeWarrior 8.0 Gold.....	\$3

Microsoft		
99702	Cinemania 96 CD.....	\$1
95750	Encarta 96 CD.....	\$1
00227	Excel V5.0 Full Version.....	\$2
04545	Excel V5.0 Version Upgrade.....	\$1
04293	Flight Simulator V4.0.....	\$1
99696	FoxPro V2.6 Full Version.....	\$1
18059	Office V4.2.1 Upgrade.....	\$2
96024	Office V4.2.1 Upgrade CD.....	\$1
06300	PowerPoint V4.0 Upgrade Version.....	\$1
04161	Project V4.0 Full Version.....	\$1
06184	Project V4.0 Upgrade.....	\$1
04898	Word V6.01 Full Version.....	\$2
00596	Word V6.01 Upgrade.....	\$1
05750	Works 4.0.....	\$1

Nisus Software		
03479	Nisus Writer 4.1 for Mac.....	\$1
93238	Nisus Writer w/Language Key 4.1.....	\$2

Now Software		
06713	TouchBase & DateBook Pro 4.2 Deluxe CD.....	\$1
99120	Now Up-to-Date V3.6/Now Contact V3.6.....	\$1
04191	Now Utilities V6.0.....	\$1

92896	Optimem RAM Charger.....	\$1
-------	--------------------------	-----

Peachtree Software		
02594	Peachtree Accounting.....	\$1

Personal Computing		
92014	ADAM The Inside Story.....	\$1
02785	After Dark v3.0-Berkeley Systems.....	\$1
93161	Kid Pix Studio CD for Mac.....	\$1
90082	Millie's Math House CD-Edmark.....	\$1
05518	Music Time v2.0-Passport Designs.....	\$1
05984	Reunion 4.0 The Family Tree Software.....	\$1
05934	Star Trek Screen Saver-Berkeley Systems.....	\$1
96777	Street Atlas USA 2.0.....	\$1
87526	The Lost Mind Of Dr. Brain.....	\$1
90042	The Playroom CD-8roderbund.....	\$1
89738	The Tortoise and the Hare CD-8roderbund.....	\$1

Quark		
95320	QuarkXPress V3.32 for Mac/Power Mac.....	\$1

PhotoDisc		
97349	PhotoDisc Starter Kit.....	\$1

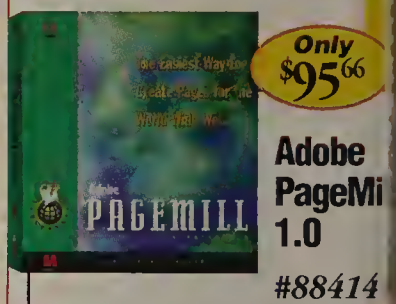
Roy Dream		
00441	Designer V4.0.....	\$1
04150	JAG II.....	\$1
88707	Ray Dream Studio Upgrade.....	\$1

SoftKey		
95594	American Heritage Talking Dictionary CD Mac/Win.....	\$1
03631	Calendar Creator 2.0.....	\$1
00641	WriteNow V4.0 w/Correct Grammar.....	\$1

Stalker Software		
90146	SCSIShare.....	\$1
92867	LineShare.....	\$1
92868	PortShare Pro.....	\$1

Stroto		
99509	StudioPro 1.75.....	\$1
93883	StrataType 3D 2.5.....	\$1
89777	Strata Virtual Studio.....	\$1

Symontec		
06231	ACT! V2.5.....	\$1
06997	Disk Doubler Pro V1.1.....	\$1
03481	MacTools 4.0 Pro.....	\$1
04890	Norton Utilities V3.2.....	\$1



Only \$95⁶⁶

Adobe PageMi 1.0
#88414

93976	Norton Utilities V3.2 Upgrade.....	\$1
00116	SAM 4.0.....	\$1
04776	Suitecase V3.0.....	\$1

06243	Software Ventures MicroPhone Pro.....	\$1
-------	---------------------------------------	-----

T/Maker		
91303	ClickArt Incredible Image Pak 25000.....	\$1

WordPerfect		
03972	WordPerfect V3.5 Full Version.....	\$1
25917	WordPerfect V3.5 Full Version CD.....	\$1
05013	WordPerfect V3.5 Upgrade.....	\$1

Call MAC BARGAIN\$ before you buy!
1-800-619-9091

Add applicable sales tax (only in OH, WA). All shipments refer to "in stock" items, barring system failure, etc. Not responsible for typographical errors. Credit cards are not charged until the order is shipped. Most products ship the same day for overnight delivery. Overnight delivery is only \$7 for the first 7 pounds and \$1 for each additional pound. Call for international shipping rates. Packaging and handling \$4 per order for delivery in the USA. Returns subject to a restocking fee. Prices and product availability subject to change without notice. Specials and promotions may be limited to stock on hand.



For the Best Deals Around!
1-800-619-9091

MONITORS

Sony	
Multiscan 15sx	\$419.00
Multiscan 15sf II	\$499.00
Multiscan 17sf II	\$589.98
Multiscan 17se II	\$1,049.00
Multiscan 20sf II	\$1,789.00
Multiscan 20 TC	\$3,399.00
Rodius	
Intelliscan 20e Display	\$1,799.00
PrecisionView 17"	\$969.98
PrecisionView 21"	\$2,189.00
NEC	
Multisync M700	\$879.98
XV15+ 15" Color Mtr	\$499.00
XV17+ 17" Color Mtr	\$829.00
XP 21 21" Color Mtr	\$2,049.00
XE 21 21" Color Mtr	\$1,769.26

Robotics

Modems	
Mac & Fax Sportster 14.4	\$79.98
Mac & Fax Sportster 28.8 V.34	\$196.98
Mac & Fax Sportster Voice 28.8 V.34	\$215.98
Mac & Fax Sportster PC Card 28.8 V.34	\$289.98

Viewsonic	
ViewSonic 17EA Cir Mtr	\$679.98
ViewSonic PT770	\$849.98
ViewSonic PT810	\$1,869.00

VIDEO/GRAPHICS BOARDS

ATI	
Exclaim GA 2MB PCI	\$348.98
Exclaim GA 4MB PCI	\$457.98
Exclaim GA 2MB Upgrade	\$229.98
Connectix	
QuickCam	\$89.98
Focus	
LapisColor 16 for LC	\$314.98

Rodius	
Spigot Power AV	\$799.98
Thunder IV GX 1152	\$1,649.00
Precision Color 8/1600 PCI	\$455.98
Thunder 30/1600 PCI	\$1,147.00
ThunderColor 30/1600 PCI	\$1,899.00
ThunderColor 30/1152 PCI	\$1,534.00
VideoVision Studio 2.0	\$2,499.00

TrueVision	
Targa 2000 Nubus	\$2,499.00
Targa 1000 PCI	\$2,799.00
Targa 2000 PCI	\$4,699.00

ELEXORIS	
Doystor	
PowerCard 66MHz	\$599.98
Turbo 601 100MHz for ILC	\$1,149.00
Turbo 601 100MHz for ILC, vx P600	\$1,149.00
Turbo 601/66MHz	\$649.98

DVC	
Equalizer for PowerMac 6100/7100/8100	\$69.98

NEWER TECHNOLOGY	
Newer Power Clip for 6100/7100	\$79.98
Newer Power Mac 256K Cache 7200/7500/8500	\$149.98
Newer 1MB VRAM DIMM 7200/7500/8500	\$99.98
117 MHz OK 603E Upgrade F/P8500	\$624.98
117 MHz 4MB 603E Upgrade F/P8500	\$819.98
117 MHz 8MB 603E Upgrade	\$1,010.00

WORKING	
Asonte	
10T FriendlyNet Adapter	\$39.98
10T HUB/8 w/ 10T/TN Ports	\$149.98
MC+30/ET64 ILSI & SE/30 (TK/10T)	\$144.98
Micro EN/SC for PowerBooks 10T	\$209.98
Thin FriendlyNet Media Adapter	\$52.98
Forollon	
AirDock Infrared Connector	\$63.98
EtherWave AAUI Transceiver	\$94.98
EtherWave LC Card	\$168.98
EtherWave Multi Printer Adapter	\$329.98
EtherWave NuBus Card	\$169.98
Performantz	
TeleNet Connector DIN 8	\$13.98
Interex 10BaseT Transceiver	\$29.98

COMMUNICATIONS/MODEMS	
Global Village	
PowerPort Gold PC Card 14.4	\$174.98
PowerPort Mercury for PowerBook 5XX	\$318.98
PowerPort Platinum for PowerBook 1XX	\$324.98
PowerPort Platinum V.34 PC Card	\$315.98
PowerPort Platinum Pro V.34/10-T PC Card	\$474.98
TelePort Gold II	\$103.98
TelePort Platinum V.34 for Desktop Macs	\$194.00
Megahertz	
CruiseCard Mac 14.4 with XJack	\$89.98
CruiseCard Mac 28.8 V.34 with XJack	\$279.98
Motorola	
Power V.34 Data/Fax Modems	\$239.98
LifeStyle V.34 Data/Fax Modem	\$199.98
Performantz	
28.8 V.34 Fast Mac FaxModem	\$135.98
Practical Peripherals	
MacClass MC288T2-EZ PCMCIA	\$299.98

92951	MacClass MC288MT II v.34	\$179.35
Supra		
93719	FAXNetwork Software Server	\$69.98
93721	FAXNetwork Software 10 User	\$179.98
93736	Supra Express 144 Plus	\$89.98
06865	Supra FaxModem 144PB Int - PowerBook	\$155.98
90212	Supra FaxModem 288 V.34 Int for PB	\$179.98
89309	Supra Express 288 V.34 FaxModem	\$154.74
00413	Supra FaxModem V.32BIS (MC) w/Soft Cable	\$173.98
TDK		
91807	TDK 28.8 PCMCIA FaxModem for Apple Sox	\$259.98
US Robotics		
93701	Mac & Fax Sportster 14.4	\$79.98
92953	Mac & Fax Sportster 28.8 V.34	\$196.98

STORAGE DEVICES		
FW		
06271	CD-ROM Toolkit	\$47.98
00555	Hard Disk Toolkit	\$115.98
05476	Hard Disk Toolkit - Personal Ed	\$46.98
94121	SCSI JackHammer	\$449.00
LoGe		
86312	D Drive External 1280MB	\$349.98
89875	D Drive External 2150MB	\$639.98
86295	2160MB	\$649.98
Microtech International		
89609	Polaris 500MB Ext	\$274.98
89611	Polaris 1.0GB Ext	\$379.98
89612	PDelis Power 3.5" MD 230MB	\$489.00
ProMax		
32254	Jaz Int	\$547.98
32255	Jaz Ext	\$599.98
86199	Jaz Cartridge	\$124.98
DynaTek		
86262	1.0GB Ext HD Mac	\$345.98
86263	2.2GB Ext HD Mac	\$689.98

Syquest EZ 135 Drives and Cartridges		
SyQuest Cartridges		
As Low As \$20.98		

MEDIA		
Sony		
14368	CD-R 650MB (74min)	\$7.98
14359	DG120M 4mm Data Cart (4GB)	\$24.98
01140	3.5" 230MB M.D. 512b/s	\$22.00
Plasmon		
84838	CD-R74 650MB 4X Recordable	\$8.98
Verbatim		
21922	CD-R 4x 74min	\$8.98
01169	230MB 3.5" R/W 1024b/s MD	\$20.98
33616	8mm DL 160m Data Tape	\$14.98
97982	5.25" 1.3GB Rewritable Optical	\$64.98

CD-ROM/MULTIMEDIA		
NEC		
90485	Multispin 6XE CD-ROM	\$339.98
28660	Multispin 4XC QuadSpeed 7 Disk Changer	\$338.98
Performantz		
88573	Performantz 4x CD-ROM	\$159.00
06688	Performantz 8x CD-ROM	\$298.98
Sony		
91947	4X Speed CD-Rom CSD-7611	\$289.98
01172	Computer Speaker System CSS-8100	\$39.00
91982	Spressa CD-Recorder CD CSP-9211S	\$1,189.00
13166	SRS-D2K Speakers w/ Subwoofer	\$134.98
91944	SRS-D4K Speakers w/Subwoofer	\$199.98

SCANNERS		
Agfo		
02135	Arcus II	\$1,979.00
89851	StudioScan ILSI	\$749.00
Epson		
91939	ES-1000C	\$737.00
02133	ES-1200C	\$949.98
02110	ES-1200C Pro	\$1,122.00
Hewlett Packard		
87989	ScanJet 4C	\$949.98
Nikon		
86274	Coolscan II	\$1,199.00
89921	Super Coolscan LS-1000	\$1,953.00
01174	Scantouch Flatbed Scanner	\$1,117.00
Polaroid		
01192	SprintScan 35mm FilmScanner	\$1,499.00
Umax		
86269	Vista S-6E	\$398.98
01193	Vista S6 Pro 2	\$649.00
86808	Vista S12 Pro 2	\$886.00
01189	Powerlook Pro 2 w/TMA	\$1,890.00

88594	Powerlook II	\$2,449.00
86272	Umax Mirage D-16L Tabloid Scanner	\$5,999.00
Visioneer		
88164	PaperPort Vx for Macintosh	\$349.98

INPUT DEVICES		
Adesso		
91099	Tru-form Extended Keyboard w/Pointer	\$99.98
91854	Soft Touch Extended Keyboard	\$48.98
Alps		
92698	Alps Glidepoint for Mac	\$56.98
Colcomp		
91862	Drawing Slate II 12x12 w/Pressure Pen	\$224.00
91864	Drawing Slate II 6x9 w/Pressure Pen	\$194.00
Kensington		
93628	Thinking Mouse ADB	\$84.98
05176	TurboMouse 4.0 Trackball w/4.1 Software	\$99.98
Performantz		
90677	Soft Touch Extended Keyboard	\$44.98
Wacom		
90643	ArtPad II (ADB) w/Erasing UltraPen	\$134.98
90644	ArtPad II (ADB) w/ Dabblor Bundle	\$149.98
90646	Artz II 12x12 (Serial) w/Erasing UltraPen	\$399.98
90645	Artz II 6x8 (ADB) w/Erasing UltraPen	\$297.98

PRINTERS		
Accessories		
05765	Macintosh DIN 8 Printer Cable	\$6.48
86166	Port Juggler 4X	\$94.98
Epson		
20670	Stylus Color II Ink Jet	\$299.98
89901	Stylus Color Pro Ink Jet	\$449.98
87980	Stylus Pro XL Ink Jet	\$1,789.00
19291	Stylus Color Color Cartridge	\$29.98
19292	Stylus Color Black Cartridge	\$15.98
89178	Stylus Color 720dpi Coated Paper (100 sheets)	\$13.98
Hewlett-Packard		
88902	HP DeskWriter 600	\$238.98
94057	HP DeskWriter 660C InkJet	\$348.98
86321	HP DeskJet 855Cse Color InkJet	\$499.98
23786	HP LaserJet 5MP	\$1,044.00
Tektronix		
92531	Tektronix Phaser 140	\$1,195.00
GCC		
91381	Elite XL608 Tabloid Printer	\$2,469.00
90447	Elite XL 1208 Tabloid Printer	\$4,410.00

POWER BACKUP		
APC		
94396	APC Personal Surge Arrest	\$32.98
94395	APC Personal Surge Arrest w/Phone	\$24.98
07150	BackUps 280	\$99.98
99364	BackUps 400	\$148.98
11651	BackUps 600	\$249.98
19034	BackUps 900	\$349.98
19035	BackUps 1250	\$449.98

MOBILE COMPUTING		
Torgus		
06023	NotePac (4 color choices)	\$29.98
06610	Leather Notebook Case	\$89.00
07454	Universal Notebook Case	\$59.98
Teropin		
90782	TGL300 Deluxe Leather - Black	\$99.99
90783	TGL400 Leather - Black	\$84.99
90784	HS300 Hardshell Workstation - Black	\$42.99
90786	SS300 Softshell Workstation - Black	\$24.99

ACCESSORIES		
Performantz		
05772	SCSI Cable CTX 50M-CTX50M 2FT	\$12.98
05773	SCSI Cable CTX 50M-CTX50M 6FT	\$13.98
05839	SCSI Cable HDI 30M-CTX50M 24IN	\$38.98

AS LOW AS \$18.98 MB		
----------------------	--	--

MEMORY		
30pin SIMMS		
05653	2MB 80ns Upgrade Kit (2-1MB SIMMS)	\$46.98
05655	4MB 80ns Upgrade Kit (2-2MB SIMMS)	\$89.98
05656	8MB 80ns Upgrade Kit (2-4MB SIMMS)	\$174.98
05654	16MB 80ns Upgrade Kit (4-4MB SIMMS)	\$349.98
72pin SIMMS		
06734	4MB 60ns SIMM (1x32)	\$72.98
06729	4MB 70ns SIMM (1x32)	\$69.98
06756	8MB 60ns SIMM (2x32)	\$142.98
06755	8MB 70ns SIMM (2x32)	\$139.98
06807	16MB 60ns SIMM (4x32)	\$279.98
95693	16MB 70ns SIMM (for LCIII)	\$259.98
96721	32MB 60ns SIMM (8x32)	\$589.00
168pin DIMMS		
90377	8MB 70ns DIMM (1x64)	\$156.98
90378	16MB 70ns DIMM (2x64)	\$329.98
90379	32MB 70ns DIMM (4x64)	\$539.98
90380	64MB 70ns DIMM (8x64)	\$1,050.98
PowerBook 500 Series		
95681	4MB Mem Module for 520/520c/540/540c	\$135.98
95682	8MB Mem Module for 520/520c/540/540c	\$264.98
PowerBook 5300		
89462	4MB Mem Module for 5300	\$139.98
89463	8MB Mem Module for 5300	\$234.98
89464	16MB Mem Module for 5300	\$479.98
89465	32MB Mem Module for 5300	\$949.98
VRAM		
89439	1MB VRAM DIMM for 7200/7500/8500	\$62.98



Power Macs Under \$1000!



Only \$238

HP DeskWriter 600

- 600 dpi black with Resolution Enhancement Technology (RET)
- Prints on paper, envelopes, transparencies, glossy paper, labels, cards and more
- 27 TrueType fonts for Macintosh
- Memory: 512 KB
- 100-sheet media capacity
- Add color now or later with optional HP Color kit featuring ColorSmart technology
- For more information, e-mail keyword HP600

Hewlett-Packard #88902

ViewSonic 17GA Monitor/Adapter Bundle



Only \$774

- 17" multimedia monitor (16" viewable)

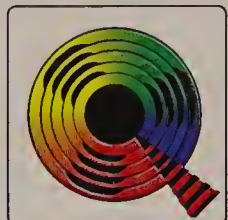
1-800-258-2622 1-800-CLUBMAC 1-800-258-2622

CLUBMAC REMOVABLE STORAGE

ClubMac 5.25"
200MB
Removable



FEATURING



SyQuest
REMOVABLE
TECHNOLOGY

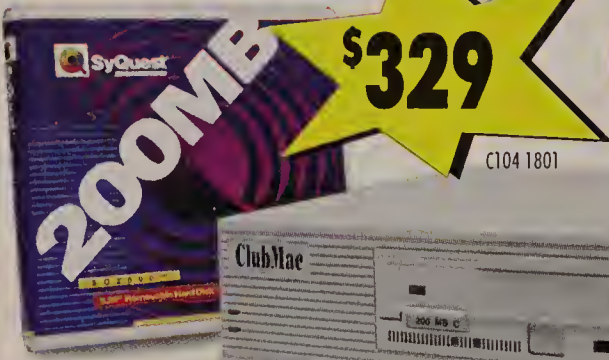


135MB

FREE
CARTRIDGE



S198 2001 EZ 135MB Drive with cartridge..... \$197



C104 1801

\$329



C104 1801

\$329

270MB

C104 1801 5.25" ClubMac 200MB Cartridge not included..... **\$329**

GENUINE SYQUEST CARTRIDGES

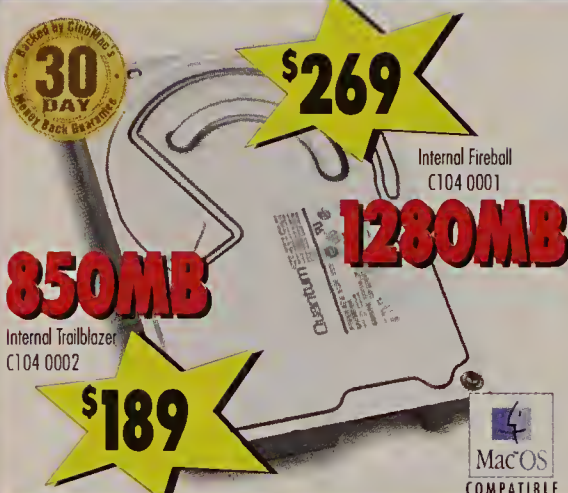
Part Number	Media	Qty 1	Qty 10	Qty 20	Part Number	Media	Qty 1	Qty 10	Qty 20
S198 1013	105MB	\$35ea	\$34ea	\$33ea	S198 1010	44MB	\$40ea	\$39ea	\$38ea
S198 1014	270MB	\$57ea	\$56ea	\$55ea	S198 1011	88MB	\$44ea	\$43ea	\$42ea
S198 2001	135MB	\$19ea	\$18 ⁵⁰ ea	\$18ea	S198 1012	200MB	\$69ea	\$68ea	\$67ea

C104 1801 3.5" ClubMac 270MB Cartridge not included..... **\$329**

C104 1803 3.5" ClubMac 105MB Cartridge not included..... **\$149**

All SyQuest drives include Chainmax Anubis formatting software, necessary cables for "plug-and-play" and documentation. All SyQuest drives include a 30-Day Money Back Guarantee TWO Year Warranty. All SyQuest cartridges include a FIVE Year Warranty (warranty after the first year is handled by SyQuest).

CLUBMAC HARD DRIVE STORAGE



850MB

Internal Trailblazer
C104 0002

\$189

\$269

Internal Fireball
C104 0001

1280MB

Quantum

Part No.	Internal	Part No.	External
850MB Trailblazer 11ms	C104 0002	\$189	C104 0052 \$249
1280MB Fireball 12ms	C104 0001	\$269	C104 0051 \$329
2170MB Saturn 8.5ms	C104 0011	\$479	C104 0061 \$539
2150MB Atlas 8.6ms	C104 0004	\$699	C104 0054 \$759
4300MB Atlas 8.6ms	C104 0005	\$899	C104 0055 \$959



Incredibly Low Price

7200 RPM • 1024K CACH

4.3GB

Internal Atli
C104 0001

\$899

CLUBMAC CD-ROM DRIVES

CLUBMAC
4.4X-SPEED
CD-ROM

\$169

4.4X

C104 1700



C104 1400	ClubMac DUAL-Speed CD-ROM Drive.....	\$79
C104 1700	ClubMac 4.4X CD-ROM Drive.....	\$169
C104 1750	ClubMac EIGHT-Speed CD-ROM Drive.....	\$299
NO24 1070	NEC MultiSpin 4Xc 7 Disc Changer.....	\$339

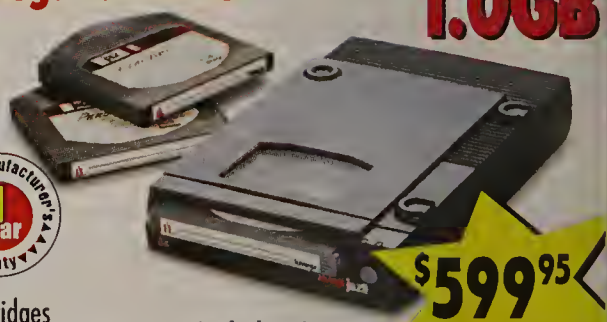


REMOVABLE STORAGE



iomega Jaz Drive

1.0GB



\$599⁹⁵

1040 1015	iomega Jaz Cartridges	
1040 1017	Jaz Cartridges (168 Single).....	\$119 ⁹⁵
	Jaz Cartridges (168 S pack).....	\$479 ⁹⁵

Includes One Cartridge!

1040 101

CLUBMAC TAPE BACKUP

CLUBMAC TAPE BACKUP DRIVES

C104 0901

\$429

4-8GB

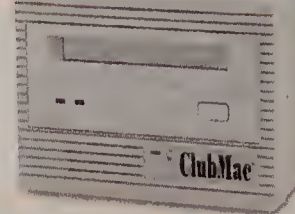
TWO Year Warranty



BUNDLED WITH
Retrospect v3.0
Backup Software



C104 0901	4-8 GB MiniSCSI w/a cartridge.....	\$429
C104 1300	2 GB ThunderDAT.....	\$749
C104 1301	4-8 GB CompressionDAT.....	\$899
C104 1302	4-8 GB PerformanceDAT.....	\$1079



iomega Zip Drive

Includes One 100MB Cartridge!



1040 1006	iomega Zip Cartridges	
1040 1011	Zip Cartridges (100MB).....	\$19 ⁹⁵
1040 1010	Zip Cartridges (3 pack).....	\$49 ⁹⁵
	Zip Cartridges (10 pack).....	\$149 ⁹⁵



\$199⁹⁵

1044 101

7 Hammond, Irvine CA 92718



NO SURCHARGE!



Authorized
Catalog Reseller



- ClubMac hard drives include all cables, cords, leads, and brackets necessary for use with the Macintosh you specify. ClubMac formats all hard drives and installs Apple System 7.1 software, Chainmax Anubis, and PowerMerge LE.
- External drives include a Double Shielded, twisted pair 25-50 SCSI cable.
- ClubMac honors all original equipment manufacturers warranties. ClubMac will repair or replace drives at it's discretion. Drives returned within first 30 days of purchase are replaced with a new unit.
- All ClubMac hard drives include a 30 day money back guarantee. Your risk is the cost of shipping.

MONITORS & GRAPHIC CARDS

Radius ThunderPower 1920

Introducing... the highest resolution PCI board available for the Macintosh - The ThunderPower 1920. This new generation of PCI cards is the result of years of experience accelerating QuickDraw for the Macintosh Platform.

- 1920 x 1440 resolution - **the highest available**
- Adobe Photoshop and Illustrator acceleration
- Hardware Pan and Zoom
- On the fly resolution and Bit Depth Switching
- New software for Thunder Dynamic Desktop™ - **Double** the performance

R013 1081

\$1799

Radius PrecisionColor 8/1600 PCI Card (R013 1069) **\$349**

Radius Thunder 30/1600 PCI Card (R013 1071) **\$999**

Radius ThunderColor 30/1152 PCI Card (R013 1072) **\$1599**

Radius PrecisionView 21 Display

FEATURES

- Resolution up to 1600 x 1200
- 21" .25mm high performance DiamondTron display
- Color management support for AGFA FotoTune 1.0 & 2.0, Apple ColorSync 1 & 2, EfiColor, and Kodak Precision.
- .30mm Dot Pitch
- Energy Star Compliant

R016 1032

\$2399

Radius PrecisionView 21 Display System (R016 1032) **\$2399**

Radius PressView 21SR Display System

FEATURES

- 21" .25mm high performance DiamondTron display
- Light-absorbing "Stealth" coat eliminates the reflection from users
- Includes ProSense Display Calibrator, ColorShield™ Hood and Display management software 1.6.S
- Color management support for AGFA FotoTune 1.0 & 2.0, Apple ColorSync 1 & 2, EfiColor, and Kodak Precision

R016 1034

\$3299

Radius PressView 21SR Display System (R016 1034) **\$3299**

Radius PressView 17SR Display System (R016 1031) **\$1999**

MultiScan 17SEII

FEATURES

- 16.0" Viewable image size
- 25 mm Aperture Grille Pitch
- Max Macintosh Resolution: 1024 x 768 75Hz
- On screen display of digital screen controls
- Macintosh Adapter included
- 3 Year Warranty parts and 2 Year CRT

S106 1018

\$915

MultiScan 17SEII (S106 1018) **\$915**

MultiScan 17SEII (S106 1019) **\$1024**

21" MultiSync XE21

FEATURES

- 21" diagonal flat square technology
- 13.8" Viewable image size
- Mac Res: 640 x 480 NI, 1024 x 768 NI
- Fine 0.28mm dot pitch
- Monitor Manager
- AccuColor, Digital controls
- Energy star compliant for true energy savings

N026 1010

\$1699

NEC 21" XE21 (N026 1010) **\$1699**

NEC 21" XP21 (N026 1011) **\$1999**

17" MultiSync XV17+

Large Screen performance at an affordable price

- Perfect entry level business, small office/home office, home education/entertainment
- 17" diagonal flat square display
- 15.6" Viewable image size
- Mac Res: 1024 x 768 NI
- PC Res: 1280 x 1024 NI
- Fine 0.28mm dot pitch
- FullScan capability
- On-Screen Manager

N026 1032

\$799

NEC 17" XV17+ (N026 1032) **\$799**

NEC 15" XV15+ (N026 1031) **\$469**

EPSON Stylus COLOR Pro

E047 1019

\$499

EPSON Stylus COLOR Pro (E047 1019) **\$499**

AGFA Arcus II

A055 1001

\$1995

AGFA Arcus II (A055 1001) **\$1995**

A055 1001 Agfo Arcus II Desktop Professional Scanner **\$1995**

A055 1011 Agfo StudioScon IIsi **\$699**

WACOM ARTZ II 6"x8" GRAPHICS TABLET

W010 1028

\$298

WACOM ARTZ II 6"x8" GRAPHICS TABLET (W010 1028) **\$298**

EPSON Stylus COLOR Pro XL

E047 1022

\$1799

EPSON Stylus COLOR Pro XL (E047 1022) **\$1799**

EPSON ES1200C Pro

E045 1003

\$1179

EPSON ES1200C Pro (E045 1003) **\$1179**

E045 1003 ES1200C Pro-MAC Color Scanner Full Package **\$1179**

E045 1007 ES1200C LE-MAC Color Scanner w/Scantastic **\$949**

E045 1013 ES1000C LE-MAC Color Scanner **\$735**

GLOBAL VILLAGE COMMUNICATION TelePort Platinum 28.8kbps Fax/Modem

G050 1016

\$199

GLOBAL VILLAGE COMMUNICATION TelePort Platinum 28.8kbps Fax/Modem (G050 1016) **\$199**

HP LaserJet 5MP

E07 1030

\$1045

HP LaserJet 5MP Printer (E07 1030) **\$1045**

Powerlook II

U010 1052

\$2495

Powerlook II (U010 1052) **\$2495**

U010 1052 Powerlook II 36-bit color capture, Transparency adapter **\$2495**

U010 1055 Visto S12Mode 33-bit color capture, 600 x 122 dpi **\$799**

Robotics 28.8 Sportster

U020 1021

\$195

Robotics 28.8 Sportster (U020 1021) **\$195**

HP DeskJet 855CXI InkJet Printer

E07 1065

\$499

HP DeskJet 855CXI InkJet Printer (E07 1065) **\$499**

VISIONEER PaperPort Vx

V029 1008

\$295

VISIONEER PaperPort Vx (V029 1008) **\$295**

ClubMac

Source Code 690896

1-800-258-2622

7 Hammond, Irvine CA 92718

MACWORLD August 1996

General Sales 24 Hours a Day, 7 Days a Week (800) 258-2622

Inquiries and Int'l Sales M - F 5am - 9pm PST (714) 768-8130

Corporate/Educ Sales M - F 5am - 5pm PST (800) 258-2621

Customer Service M - F 7am - 5pm PST (800) 551-6398

Technical Support M - F 7am - 5pm PST (800) 854-6227

24-Hour Fax (714) 768-9354

Circle 96 on reader service card

1-800-258-2622 1-800-CLUBMAC 1-800-258-2622



Call Today for Your
CATALOG

LOWRATES
BUSINESS
LEASING AVAILABLE

Corporate Accounts:
Get a Line of Credit
up to **\$50,000**
(upon Approval)

PINNACLE MICRO	
Tahoe 230	\$489 #E7228
Vertex 2.6GB	\$1266 #E7253
RCD 5040	\$884 #E7248

GRAPHICS & MONITORS

INTEGRATED MICRO SOLUTIONS	
Twin Turbo 128M (4MB)	\$529 #V9240
Twin Turbo 128M (8MB)	\$939 #V9238

NUMBER NINE Graphics Acceleration	
Image 128 8MB PCI	\$1,079 #V9248
Image 128 4MB PCI	\$669 #V9249

TRUEVISION®	
Targa 2000 (PCI)	\$3768 #V9200
Targa 1000 (PCI)	\$2559 #V9204

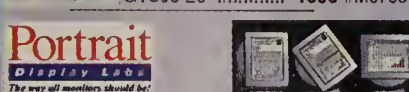
radius Your High End Solution	
PCI Cards	
ThunderColor 30/1600 PCI	\$1899 #V9102
ThunderColor 30/1152 PCI	\$1499 #V9105
Thunder 30/1600 PCI	\$989 #V9108

Monitors	
Precision View 17	\$949 #M6606
Press View 17SR	\$1899 #M6600
Press View 21SR	\$3049 #M6609
PrecisionView 21	\$2229 #M6614

RASTEROPS® Monitors	
SuperScan 20"	\$1359 #M6525
SuperScan 21HR"	\$1979 #M6706

SONY	
Sony 15SF2	\$479 #M6438
Sony 17SF2	\$779 #M6580
Sony 20SF2	\$1569 #M6574

New Item! ViewSonic®	
17GA Perfect Sound	\$699 #M6760
GT 770 17"	\$755 #M6766
GT800 20"	\$1595 #M6768



View an entire web page!
Pivot 1700 (.26 dot pitch) ... #M6599 **\$979**

International Call: 818-708-6388
Customer Service and Technical support Call: 818-708-6388

Address: 6924 CANBY AVE UNIT #104
RESEDA, CA. 91335
Mon-Fri, 8AM to 6PM (Pacific)

All Prices reflect a Cash Discount. Any other method is 2% to 4% higher. Prices are subject to change without notice. All Returns are subject to restocking fee, must be in original package, condition & needs an RMA#. No Refunds on Labor or Freight Charges.

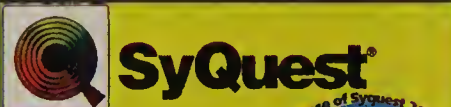
We accept Visa, MasterCard, Discover & American Express. P.O.s are accepted from U.S. Gov't, Schools & Corporations. Not responsible for typographical errors.

MacMarket

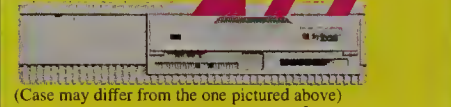
1-800-905-3034

Fax: 818-708-6399

We Have The NEW UMAX CPUs



200MB Removable Drive
\$299
#R6166



EZ-135 Removable \$195
W/Cart #R6115

PRINTERS & INPUT

EPSON	
Stylus Color ProXL	\$1699 #P3291
Stylus Color II InkJet	\$299 #P3294
ES-1200C Pro Scanner	\$1125 #P8533

WACOM	
ARTPAD II 4 x 5	\$135 #T9513
ARTZ II 6 x 8	\$299 #T9500
ARTZ II 12 x 12	\$399 #T9503
ARTZ II 12 x 18	\$669 #T9506

POWERBOOKS

5300cs100MHz8/500	Call #A1130
5300cs100MHz16/750	Call #A1133
5300c100MHz8/500	Call #A1121
5300c100MHz16/750	Call #A1118
5300ce117MHz32/1GB	Call #A1115
Duo 2300c 100MHz8/750	Call #A1106
190 66/33MHz 4/500	Call #A1112
190cs 66/33MHz 8/500	Call #A1109
150 4/250	\$499 #A1136

POWERMAC 9500
604 RISC • PCI

48MB•2GB•CD 600i•ATI	\$4,599 #A1665
80MB•4GB•CD 600i•ATI	\$5,599 #A1667
80MB•9GB•CD 600i•ATI	\$6,669 #A1669

9500 150MHz	
80MB • 8200MB FWB ARRAY • CD 600i • ATI 2MB Video	\$8,399 #A1671

POWERMAC 7600
120MHz • 604 RISC • PCI

24MB•1GB•CD600i	\$2819 #A1663
48MB•2GB•CD600i	\$3279 #A1661

7600 Complete System	
32MB RAM • 1GB Hard Drive • CD600i • 17" Monitor • Extended Keyboard	\$3,625 #A1657

Performas 6200, 5215 & 6300

6300CD/100MHz/PowerPC	\$2179 #A1193
6200CD/75MHz/PowerPC	\$1594 #A1190
5215CD/75MHz/PowerPC	\$1499 #A1191

New Low MacMarket Prices on Apple Monitors & Printers

Apple MultipleScan 14"	\$299 #M6570
Apple Multiple Scan 15"	\$439 #M6558
Apple Multiple Scan 1705	\$699 #M6638
Apple Vision 1710	\$899 #M6500
Apple Vision 1710AV	\$1049 #M6567
Apple Multiple Scan 20"	\$1859 #M6564



UMAX
Computer Corporation
Systems Include: 150MHz
604 Processor, 2nd CPU
Slot, 16MB RAM, 6.7x CD,
6PCI Slots, Floppy Drive,
5 Add'l Drive Bays

S900L
2GB HD 4MB IMS Card #A1622 Call

S900D
16MB RAM #A1624 Call

LOWEST PRICES ANYWHERE

SCANNERS

UMAX	
Mirage(11x17)	\$8560
PowerLook II Pro2	\$8520
S6E	\$8439
Vista S12 LE	\$8564
Vista S12Pro2	\$8565

MICROTEK	
III w/Photoshop	\$1842 #S8444
ScanMaker E6 Pro	\$1719 #S8463
ScanMaker E6 LE	\$559 #S8461
ScanMaker E3	\$368 #S8460

Nikon	
LS-20 Coolscan II	\$1159 #S8500
SuperCoolScan External	\$1899 #S8503

Polaroid	
SprintScan35/es	\$1469 #S8547

AGFA	
Studio Scan II Si	\$689 #S8477
Arcus II	\$1799 #S8482

POWERMAC 8500
604 RISC • PCI

16MB•1GB•CD600i•120MHz	\$2999 #A1314
48MB•2GB•CD600i•132MHz	\$4249 #A1342
80MB•4GB•CD600i•132MHz	\$4959 #A1345
80MB•2GB•CD600i•150MHz	\$4749 #A1341

8500 150MHz	
80MB • 8200MB FWB ARRAY • CD 600i • 2MB Video	\$8,069 #A1344

POWERMAC 7200
601 RISC • PCI

16MB•500MB•CD600i•90MHz	\$1299 #A1187
24MB•1GB•CD600i•90MHz	\$1633 #A1334
16MB•1GB•CD600i•120MHz	\$1999 #A1659

7200 Complete System	
16MB • 1GB • CD • 14" Monitor • Extended Keyboard • 120MHz	\$2,232 #A1655

This is the 6300 Configuration

PowerPC•603 w/FPU•16MB RAM•1GB HD•4X
Apple CD•Apple 15" Monitor•Apple Design
Keyboard & Mouse•1.4MB SuperDrive•28.8 Fax/
Modem w/ Speaker Phone & Answering Machine

MACMARKET IS MORE THAN
JUST ANOTHER MACINTOSH
DEALER. TAKE A LOOK AT
OUR GREAT HARDWARE
SELECTION & OUR LOW
LOW PRICES.
Compare & Save

Please call for the latest prices

DIMMS

8MB • 64BIT • 168PIN	\$89 #
16MB • 64BIT • 168PIN	\$149 #M
32MB • 64BIT • 168PIN	\$269 #M
64MB • 64BIT • 168PIN	\$529 #M

SIMMS

8MB • 32BIT • 72PIN 60NS	\$89 #M
16MB • 32BIT • 72PIN 60NS	\$159 #M
32MB • 32BIT • 72PIN 60NS	\$289 #M

PowerBook Memory
5300 & 190

8MB #M1387	\$209
16MB #M1390	\$389
32MB #M1393	\$699

Newer	
8MB, 64BIT 70NS DIMMS	\$106 #M
16MB, 64BIT 70NS DIMMS	\$185 #M
32MB, 64BIT 70NS DIMMS	\$388 #M
64MB, 64BIT 70NS DIMMS	\$748 #M

NUPOWI

PowerBook 500 Upgrades	
603e/117MHz	\$579 #A4541
500 PPC (CPU Only)	\$579 #A4541
500 PPC w/4MB RAM	\$759 #A4542
500 PPC w/8MB RAM	\$899 #A4544

Ultimate Upgrades DAYSTAR

100MHz Turbo 601	\$1139 #A4516
100MHz PowerCard 601	\$919 #A4498
100MHz PowerPro 601	\$1159 #A4500
0610, 650, 700, 800, 950, C610, 650 (610 needs an	

The Best Value For Your Money ATTO

Vantage ultra SCSI PCI	\$329 #A4516
ExpressPCI-SC PCI	\$293 #A4518
SiliconExpressIV(NuBus)	\$799 #A4515

FWB incorporated \$359

Jack-Hammer PCI Accelerator	#A4417
SledgeHammer 4100 PCI-W	\$2899 #H141
SledgeHammer 8200 PCI-W	\$3849 #H1414
SledgeHammer 17400 PCI-W	\$6499 #H1418
Hammer DLT 15 Gig	\$4739 #D2583
CD Recordable 4x	\$2699 #E7243

VST TECHNOLOGIES

Expansion Bay 540MB HD	\$479 #P1046
Expansion Bay 810MB HD	\$599 #P1048
Expansion Bay 1.2Gig HD	\$748 #P1050
Expansion Bay MO 230MB Optical Dr.	\$399

Yamaha

CD Recordable 4x w/Toast s/w	\$1299 #E7297
CD Recordable 2x w/Toast s/w	\$899 #E7298

GLOBAL VILLAGE COMMUNICATION

PowerPort PC Cards	
Platinum 28.8	\$319 #F8101
Platinum Pro 28.8/10Base-T	\$479 #F8104
TelePort Series	
TelePort Platinum	\$195 #F8102
TelePort Platinum Internet	Call #M1012

supraFAXmodem

Fax/Modem 28.8 v.34	\$185 #F1010
SupraExpress 28.8 Plus	\$134 #F1010

Farallon®

Netopia ISDN Modem	\$369 #F8
--------------------	-----------

Zip Drive, 5-100MB Disks & Hard Shell DoubleCase

Zip Drive	\$299 #R6168
-----------	---------------------



WE WILL TRY TO MATCH OR BEAT ANY ADVERTISED PRICE. CALL FOR LATEST PRICING!!

WE ACCEPT PO'S
FROM QUALIFIED FIRMS

M E M O R Y

SECURITY WILL CALL WINDOW NOW OPEN!
NO SURCHARGE FOR MC, VISA AE & DISCOVERL.A. Trade has served the PC
market for 10 years...

MACINTOSH MEMORY UPGRADES

Now we bring our expertise
to the Apple Macintosh user.

YOUR MACHINE	STANDARD	MAX	VIDEO UPGRADE	VIDEO COST	256K CACHE	2MB	4MB	6MB	8MB	10MB	12MB	16MB	32MB	64MB
Apple PowerBook 190, 190CS, 5300	4	32					124		199		289	379	669	48mg=899
Apple PowerBook 520, 520c, 540, 540c Notebook	4	36					114		199			379	529	
Apple PowerBook DUO 210, 230, 250 Notebook	4	24					114		209		289			
Apple PowerBook DUO 270c Notebook	4	32					114		209		299		20mg=379	36mg=679
Apple PowerBook DUO 280, 280c Notebook	4	40					114		209		299			
Apple PowerBook DUO 2300c/100 Notebook	4	40					114		199			379	689	1079
Apple Macintosh TV	5	8					74							
Apple Macintosh IIfx	4	128					119					349		1279
Apple Macintosh IISI	2/3/5	17					99		189			356		
Apple Macintosh IIfx & IISI	4	68	512k	59			99		189			356		1279
Apple Macintosh Classic							153							
Apple Macintosh Color Classic	4	10	256k	34		54	99		178					
Apple Macintosh Classic II, LC, LCII	2/4	10	512k	59		54	99		178					
Apple Macintosh LCIII, LC475, LC550, LC575	4	36	256k	34			54		94			209	429	
Apple Macintosh LC520	5	36					54		94			209	429	
Apple Macintosh LC580	5	36					54		94			209	429	
Apple Macintosh LC429	4	36					54		94			209	429	
Apple Macintosh LC5200	5	36					54		94			209	429	
Apple Macintosh IIfx	1	128					99		178			356		1279
Apple Macintosh II, IIfx	1	32					99		178			356		
Apple Macintosh Plus, SE	1	4				61	99							
Apple Macintosh SE30	1/2	32				61	99		189			356	429	
Apple Performa 200	2	10				61	99		189					
Apple Performa 400	4	10				61	99		189					
Apple Performa 405, 410, 430	4	10				61	99		189					
Apple Performa 450, 460, 466, 467, 475, 478	4	36	256k/512k	34/68			54		94			209	429	
Apple Performa 550, 575, 577	5	36					54		94			209	429	
Apple Performa 600, 600CD	4	68	512k	59			99		189			356		1279
Apple Performa 6110CD, 6112CD, 6115CD (pairs)	8/16	72					54		94			209	429	
Apple Performa 6117CD, 6118CD (pairs)	8/16	72					54		94			209	429	
Apple Performa 429	4	36					54		94			209	429	
Apple Centris 610	4	68	512k	59			54		94			209	429	
Apple Centris 650	4	132	512k	59			54		94			209	429	
Apple Centris 660AV	4	68					54		94			209	429	
Apple Quadra 605	4	36	512k	59			54		94			209	429	
Apple Quadra 610	4	68					54		94			209	429	
Apple Quadra 429	4	36					54		94			209	429	
Apple Quadra 650	4/8	132/136					54		94			209	429	
Apple Quadra 660AV	4	68					54		94			209	429	
Apple Quadra 700	4	68	512k	59			99					356		1279
Apple Quadra 800 (pairs)	8	136	512k	59			54		94			209	429	
Apple Quadra 840AV	8	128	512k	59			54		94			209	429	
Apple Quadra 900	4	256	512k	59			99					356		1279
Apple Quadra 950	8	256	512k	59			99					356		1279
Apple Workgroup Server 60 (pairs)	4	68					54		94			209	429	
Apple Workgroup Server 80 (pairs)	8	136					54		94			209	429	
Apple Workgroup Server 95	16/32/48	256					99					356		1279
Apple Workgroup Server 6150 (pairs)	8	72					54		94			209	429	
Apple Workgroup Server 8150 (pairs)	16	264					54		94			209	429	
Apple Workgroup Server 9150 (pairs)	16/24	264					54		94			209	429	
Apple Power Macintosh 6100/60 (pairs)	8	72	512k	59			54		94			209	429	
Apple Power Macintosh 7100/66 (pairs)	8	136	512k	59			54		94			209	429	
Apple Power Macintosh 7200 (168 pin)	8	136	1mg	69	119		89		95			199	419	839
Apple Power Macintosh 7500/100 (168 pin)	8	136	1mg	69	119		89		95			199	419	839
Apple Power Macintosh 8100/80 (pairs)	8	264	512k	59			54		94			209	429	839
Apple Power Macintosh 6100/66 & 6100/66AV (pairs)	8/16	72					54		94			209	429	
Apple Power Macintosh 7100/66AV (pairs)	16	136					54		94			209	429	
Apple Power Macintosh 7100/80, 7100/80AV (pairs)	8/16	136					54		94			209	429	
Apple Power Macintosh 8100/100, 8100/100AV (pairs)	8/16	264					54		94			209	429	
Apple Power Macintosh 8100/110 (pairs)	8/16	264	512k	59			54		94			209	429	
Apple Power Macintosh 8500/120	8/16	264			94		89		95			199	429	839
Apple Power Macintosh 9500/120, 9500/132	8/16	264	1mg/2mg(120)	69/130	119		89		95			199	429	839
Apple Power Macintosh 9500	8/16	264	1mg	69	119		89		95			199	429	839
Apple LaserWriter LS	512k	1				512k=37								
Apple LaserWriter NTR	3	4				54								
Apple LaserWriter NT	2	8							94					
Apple LaserWriter II NTX	2	12					99		290					
Apple LaserWriter II NTX-J	4	12					99		290					
Apple LaserWriter IIf	2	32										356		
Apple LaserWriter IIfg	5/8	32					99					356	712	
Apple LaserWriter Select 300	512k	4.5				1mg=34	54							
Apple LaserWriter Select 310	1.5	5.5				1mg=44	54							
Apple LaserWriter Select 360	7	16										209		
Apple LaserWriter Pro 600	4	32					54					209	429	
Apple LaserWriter Pro 429	4/8	32					54					209	429	
Apple LaserWriter Pro 810	8	32					54					209		
Apple LaserWriter 16/600PS	8	32					54		94			209	429	

ALL OTHER POWERBOOKS...100, 140, 145, 170, 160,
165, 180, 165C, 180C - CALL FOR PRICES!!!

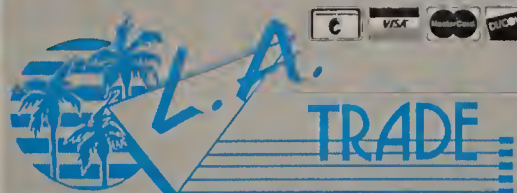
SIMM MODULES

72 PIN MODULES	30 PIN MODULES
1x32-70 (4MB)\$74	1x8-80 (1MB)\$25
1x32-60 (4MB)\$79	1x8-70 (1MB)\$29
2x32-70 (8MB)\$139	2x8-70 (2MB)\$46
2x32-60 (8MB)\$149	4x8-70 (4MB)\$89
4x32-70 (16MB)\$279	8x8-70 (8MB)\$199
4x32-60 (16MB)\$289	16x8-70 (16MB)\$319
8x32-70 (32MB)\$569	
8x32-60 (32MB)\$579	

DIMMS, 168 Pin

1x64	8Meg	\$ 95	8x64	64Meg	709
2x64	16Meg	179	16x64	128Meg	Call
4x64	32Meg	335			

CALL FOR NEW MODELS NOT LISTED

All products brand new & guaranteed • We buy excess inventory
Trademarks are registered with their respective companies.22825 Lockness Avenue • Torrance, CA 90501
CUSTOMER SERVICE & TECHNICAL: OPEN M-F, 9-4 PST

SCSI HARD DRIVES

Model	Size	Seek	Buffer	RPM	Price
Quantum 1080 SCSI	1.08 Gig	12	128K	5400	\$279.00
Quantum 32151 SCSI	2.1 Gig	8.6	512K	7200	629.00
Quantum 32151 WSCSI	2.1 Gig	8.6	512K	7200	639.00
Quantum 32150 SCSI	2.1 Gig	8.5	1024K	7200	659.00
Quantum 34301 SCSI	4.3 Gig	8.6	512K	7200	919.00
Quantum 34301 WSCSI	4.3 Gig	8.6	512K	7200	949.00
Quantum 32171 SCSI	2.1 Gig	8.5	512K	5400	559.00
Quantum 34300 SCSI	4.3 Gig	8.0	1024	7200	1069.00

NO SURCHARGE FOR MASTERCARD, AMEX, VISA OR DISCOVER. PURCHASE ORDERS ACCEPTED FROM FOR-
TUNE 2000, GOVERNMENT & INSTITUTIONS. California orders add 8.25% sales tax. Returned orders or ordered
wrong parts are subject to a 20% restocking fee. We accept International orders shipped via UPS Air. APO, FPO
orders welcome. Customers are expected to pay customs and "other" charges if shipped Int'l. All credit card charges
verified for fraudulent use. SORRY, NO REFUNDS AFTER 30 DAYS - EXCHANGES ONLY. If you receive defective mer-
chandise we exchange only—no refunds. We accept MC, VISA, Discover, AE, prepaid orders, purchase orders, wire
transfer, bank (cashiers check) orders, cash & cashiers checks. Orders shipped by air: retail must be signed for.
• ALL MANUFACTURER PART #S ARE FOR REF. ONLY • MINIMUM ORDER \$40.00 • NO REFUNDS ON SHIPPING

310-539-0019
FAX: 310-539-5844SECURITY WILL
CALL WINDOW
NOW OPENCALL
TOLL FREE1-800-433-3726
(US and Canada)ESTAB.
1985Prices & Availability
Subject to Change
Without NoticeMon-Fri, 8:00 a.m. to 5:00 p.m. PST
Sat. 10:00 a.m. to 12:00 noon

PRICES MAY FLUCTUATE. CALL FOR LATEST PRICING!!



The Catalog with the Great Deals

What Great Deals

PowerComputing

MacUser ZD
LABS

5555 1/2

MW ★★★★★



See our full line
catalog for the
PCI PowerWave!

The **Fastest** Mac™ OS Compatible Is Here!
introducing

- PowerPC™ 604 RISC Processor w/L2 Cache
- 16MB RAM/2GB Hard Drive
- 4X CD-ROM Drive
- 100% Mac™ OS Compatibility
- \$900 worth of FREE Software

166MHz
16MB RAM
2GB Hard Drive
4X CD-ROM
\$3795
Order #80620

PowerTower™ 180MHz 604 RISC Processor
w/L2 Cache/16MB RAM/2GB Hard Drive/4xCD **\$4195** #80621

275 MHz OF POWER!

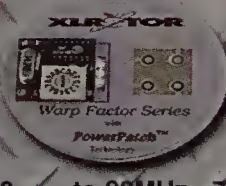
AFTERBURNER MVP

The first Parallel Processor card to break the 100MHz barrier for all 60MHz, 66MHz & 80MHz Power Macs™!

- High-Performance PowerPC™ 601 plus™ processor
- 120MHz standard speed, 140MHz Pro version available
- Out performs the Power Macintosh® 9500
- Allows Parallel processing for up to 275MHz of power!
- 100% compatibility with 6100, 7100 & 8100 PPC

AfterBurner MVP (120MHz) **\$1,299⁹⁹** #78002
AfterBurner MVP PRO (140MHz) **\$1,379⁹⁹** #78003

WARP FACTOR 175
175MHz accelerator for
8500 & 9500
Fastest Available!



\$199⁹⁹ #78001

6100..... to 90MHz · 7100..... to 90MHz
8100/80.. to 90MHz · 8100/100.. to 128MHz
8100/110..up to 135MHz

Arctic **\$79⁹⁹** #78005
Active Cooling System (-70) degrees F.

HYPERSPEED **\$179⁹⁹** #78004
7200 & 7500-128MHz

WARP FACTOR 135
\$79⁹⁹ #78039



PowerComputing

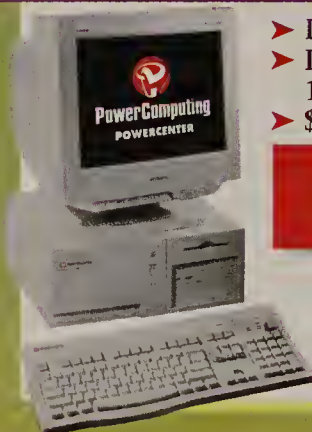
Introducing **PowerCenter™**

- PowerPC™ 604 RISC processor w/L2 Cache
- Includes Macintosh system 7.5.3 and a 100% guarantee of Mac OS compatibility
- \$900 worth of FREE Bundled Software

120MHz/604
8MB RAM/850MB HD
4X CD-ROM
\$1995
Order #80617

PowerCurve™ 132MHz/604
16MB RAM/1GB HD/4xCD ... **\$2495** #80618

PowerCurve™ 150MHz/604
16MB RAM/1GB HD/4xCD ... **\$2995** #80619



FUJI 3.5" OPTICAL DISKS

3.5" 230MB Mac-Formatted 3-Pack
After \$20 Mail-in Rebate **\$69⁹⁹** #72382
3.5" 230MB Unformatted 3-Pack
After \$20 Mail-in Rebate **\$59⁹⁹** #72199
3.5" 128MB Mac-Formatted 3-Pack
After \$20 Mail-in Rebate **\$49⁹⁹** #68884
3.5" 128MB Unformatted 3-Pack
After \$20 Mail-in Rebate \$1 off ... **\$44⁹⁹** #71112

*Prices reflect a Mail-in rebate direct from Fuji

Fuji CD-R Recordable CD

CD-R Recordable CD 74 min/650MB,
3-Pack After \$10 Mail-in Rebate **\$16⁹⁹** #68885
CD-R Recordable CD 550MB/63min **\$7⁹⁹** #68534
CD-R Recordable CD 650MB/74min **\$8⁹⁹** #68535

IOMEGA® ZIP DRIVE

Stores
100MB
on one
↓
3.5" cartridge



Iomega ZIP Drive (SCSI)
\$199⁹⁹

ZIP cartridge (single) **\$19⁹⁹** #69404



IOMEGA® JAZZ DRIVE

1GB
removable
storage
drive!



Imagine: you
can fit your whole hard
drive on one Jaz cartridge!

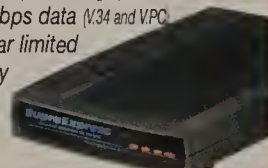
Iomega
1GB JAZ
Drive **\$599⁹⁹** #74475



SUPRA

Supra Express™ 28.8 Fax/Modem

- V.42bis data compression for up to 115,200 bps throughput
- 28,000 bps data (V.34 and V.FC)
- Five-year limited warranty
- 14,400 bps fax



28.8 V.34
Fax/Data
Modem **\$159⁹⁹** #74097

CAERE

OmniPage Pro 6.0

Upgrade Your
Scanner Soft-
ware to Omni-
Page Pro 6.0 for
Macintosh® and Save Over \$300!

Upgrade
Mac™ 3.5" Diskette **\$147⁹⁹** #78336

OmniPage Pro 6.0
Mac™ 3.5" Diskette **\$499⁹⁹** #78307



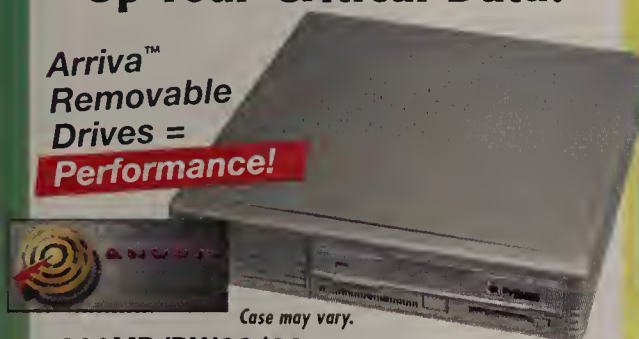
Call 1•800•217•9492 for your FREE Catalog

Have You Missed?

SYQUEST® DRIVES

The Safest Way to Back Up Your Critical Data!

Arriva™
Removable
Drives =
Performance!



Case may vary.

200MB/RW88/44
SyQuest® External
Drive
(cartridge not included) **\$349⁹⁹** #72029

270MB/RW105
SyQuest®
External Drive
(cartridge not included) **\$349⁹⁹** #64243

All Arriva™ Drives come with CharisMac
Anubis formatting software

SYQUEST® EZ-135

135MB

Removable Drive

- 135MB capacity
- SCSI Interfaces
- Avg. Seek Time: 13.5/ms
- Cartridge



SyQuest **\$199⁹⁹** #73549

MACROMEDIA

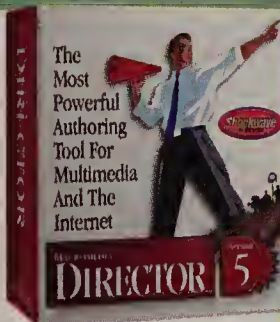
Director 5.0!

Now ShockWave Enabled
and Ready to Help You
Create Your Web Site!

Director 5.0 Shockwave Enabled CD
Upgrade PowerPC™/Mac™

\$399⁹⁹ #79240

Director 5.0 Shockwave Enabled CD PowerPC™/Mac™ **\$879⁹⁹** #79239
Director 5.0 Shockwave Enabled for Windows™ CD **\$849⁹⁹** #79243



Enter the Dream Machine Sweepstakes

You could win this Porsche Boxster



Call
1•800•217•9492

**For Our Full Line Catalog
& Get All The Details**

No purchase necessary. For complete details including official rules see the MacMall catalog 57 or higher. Sweepstakes open to US residents 21 years of age or older. Void where prohibited. Car depicted is a prototype. Actual car to be awarded may vary.

INSIGNIA 35% FASTER!

SoftWindows™ 3.0
for Power Macintosh®
upgrade CD

\$74⁹⁹ CD #79637

SoftWindows™ 3.0
for Power Macintosh® Disk Upgrade **\$74⁹⁹** #79638

SoftWindows™ 3.0 Full Version CD **\$299⁹⁹** #79229



UMAX

36-Bit PowerLook II with FREE Transparency Adapter! A \$500 Value!

The NEW PowerLook II single-pass scanner features 36-bit color data capture for over 68.7 billion colors. It's armed with a density range of 0.1 to 3.3 D, for the richest and sharpest images. You can use its Ultra View Technology (with resolutions up to 9600dpi) for brilliant enlargements.



36-Bit PowerLook II Mac MetaTools

- Live Picture • Kai's Power Tools Mac™/PowerPC™
- KPT Convolver 1.0 • Kai's PowerPhotos

\$2495⁹⁹ #78933

OR

36-Bit PowerLook II Mac Pro2.

- Full Photoshop™ 3.0 • Kai's Power Tools SE
- Kai's PowerPhotos Sample CD • WordLinx OCR

\$2495⁹⁹ #78154

VIEWSONIC

This high-resolution, super-crisp monitor is specially designed for graphics-intensive applications including pre-press and desktop publishing.

- .25mm Aperture Grille
- Flat SonicTron™ Screen
- 1280x1024 resolution
- On-View™ Controls
- PC/Mac™ Compatible



Viewsonic® GT770 17" Color Monitor **\$829⁹⁹** #81043

Get your FREE catalog(s) today!

Please Check catalog(s) you wish to receive.

- ☐ MacMall
☐ PC Mall
☐ DataCom Mall

Name _____

Address _____

City _____

State _____

Zip _____

OFFER CODE
MacUser
ZMWO681

Mail to:
MacMall, Dept. ADV.,
2645 Maricopa St.,
Torrance, CA 90503

We're open to take your order anytime,
24 hours a day, seven days a week.



Order toll free: 1•800•217•9492

Circle 131 on reader service card

ViewSonic Color Monitors

as low as
\$399



MacWARE

We carry over 6,000 products for your Mac!

15ES: 15" Entré Series (shown)
(13.7" viewable image size)
Ask for item # BND 1152 **\$399**

**17GA Perfect Sound
Multimedia Monitor: 17"**
(16.0" viewable image size)
Ask for item # BND 1151 **\$849**

Global Village TelePort Platinum 28.8 Modem

Features voice/Fax,
Call Recognition
and Fax/ARA.

only
\$199⁹⁵

Ask for item
DMD 1452

NEW! Iomega JAZ DRIVE

Store 1GB on
one 3.5" disk!

Includes a free
1.0GB cartridge,
all for only
\$499⁹⁵

Ask for
item # DRI 1119

CD-ROM Drive BLOWOUT!

Get a blazing-fast
QUAD SPEED CD-ROM
drive at the
Lowest Price Ever!
Now Only

\$179⁹⁵!

Ask for item # BND 0678

The Nova ART EXPLOSION! 40,000 images
and 1,200 fonts on 5 CD-ROMs! Ask for item # BND 0223

4 Ways to Order:

1. Call 1-800-255-6227
2. FAX: 1-908-905-9279
3. CompuServe: GO MW

NEW! MacWAREHOUSE
is now on the
Internet

Now you can order your favorite

Macintosh products on the Net!

✓ Hundreds of shareware and demo
titles for you to download!

✓ Latest Information on the newest products!

<http://www.warehouse.com>

1. Our customer service staff is ready to take your order 24 hours a day, 7 days a week.
2. We accept the following major credit cards: Visa, MasterCard, Discover, AmEx. Your credit card will not be charged until each item is shipped (no surcharge).
3. CT, NJ, and OH residents add applicable sales tax.
4. Shipping charge for orders under 10 lbs. is \$3.00. Orders over 10 lbs. are \$1.00 per pound or fraction thereof.
5. Place your order for "in-stock" items up to 12:00 midnight (E) (weekdays), and we will ship same day for overnight delivery (barring system failure, etc.).
6. We use Airborne Express, unless UPS Ground offers overnight delivery to your area. (Some areas of the U.S. require more than one day delivery.)



7. Many of our products come with a 30-Day Money Back Guarantee. If, for any reason, you are not completely satisfied with your purchase of any of these items, call our

Customer Service Department at 1-800-925-6227 for a Return Authorization Number and a full refund of the original purchase price of the item, excluding shipping and handling charges. Ask our operator at the time of ordering if the product is covered by the Money Back Guarantee. You must return the undamaged product at your expense, including all its packaging and documentation and the blank warranty card if applicable. All items we sell come with the MacWAREHOUSE



30-Day Guarantee Against Defects. If your product is defective in any way, all you have to do is call our Customer Service Department for a Return Authorization

Number. Defective software will be replaced upon receipt of the defective product. Defective hardware will be replaced or repaired at our discretion.

© Copyright 1996 Micro Warehouse, Inc. MacWAREHOUSE® is a division of Micro Warehouse, Inc. MacWAREHOUSE® and MicroWAREHOUSE® are registered trademarks and Data Comm WAREHOUSE and MacSystems WAREHOUSE are trademarks of Micro Warehouse, Inc. Apple, the Apple logo, Mac and Macintosh are registered trademarks of Apple Computer, Inc. Item availability and price subject to change without notice. We regret that we cannot be responsible for typographical errors.

MEMORY UPGRADES as low as **\$29⁹⁵**

1MB, 30 pin,
80ns

Ask for item # CHP 0022

We'll install
your SIMMs
for only \$29.95 extra
when you purchase your CPU and SIMMs at the
same time. Orders must be placed by 8pm (EST)
for overnight delivery. Ask for item # INSTL01

SyQuest EZ135 Drive Store 135MB on one 3.5" cartridge

Ask for item # DRI 1129

Only
\$189⁹⁵
Drive
only

**FREE 135MB
Cartridge!**

	1-4	5-9	10+
135MB cartridge(s) ask for item # MED 0166	\$29.95 price each	\$27.95 price each	\$24.95 price each

*To receive cartridge—shipped directly from SyQuest—you must send in the coupon on box, plus: original sales receipt, registration card, UPC label from back of box, and a \$5 check or money order for shipping and handling. Please allow 4-6 weeks for delivery. Drive must be purchased no later than 7/31/96.

NEW Color Quickcam

only
\$199⁹⁵*

Ask for item
INP 0676

A complete, 24-bit digital video system that's
as easy to install as plugging in a mouse!

* Price reflects a manufacturer's \$30 rebate.
Price before rebate: \$229.95. Offer expires 8/31/96.

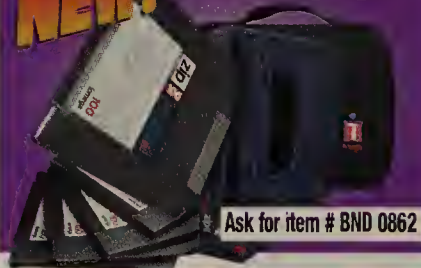
Zip Drive Deluxe Kit

You get:

- Zip Drive!
- Five 100MB Disks!
- Zippered carrying case!

Utility Software included on
first 100MB disk

\$299!



Ask for item # BND 0862

Run any Windows or DOS application
right on your Power Macintosh!

SoftWindows 3.0 and SoftWindows 95



SoftWindows 3.0 Upgrade for Power Macintosh UPG 0255 CD-ROM (UPG 0254 Diskette)	\$79.95
SoftWindows 3.0 for Power Macintosh COM 0351 CD-ROM (COM 0354 Diskette)	\$299.95
SoftWindows 95 Upgrade for Power Macintosh UPG 0253 CD-ROM	\$149.95
SoftWindows 95 for Power Macintosh COM 0352 CD-ROM	\$349.95
SoftWindows 95 includes Windows 95 operating system pre-installed.	

**PowerBook
MEMORY**
as low as
\$199⁹⁵
each

The Visioneer PaperPort Vx™

The easiest way to get paper into your Mac!



Ask for
item #
INP 0560



Speed Doubler, RAM Doubler & Conflict Catcher 3

all
three
only
\$99⁹⁵

Ask for
item # MSB 0044



Shipped in promotional packaging.

We carry the full line of Apple Powerbooks.

WAREHOUSE®

Plus a full line of Macintosh™ computers!

SPECIAL ZIP DISK BUNDLE

6 Zip 100MB
Removable Disks only
\$99⁹⁵

and get
an organizer
caddy FREE
— a \$14.95 value!

Ask for item #BND 1116

MacWAREHOUSE HOT LIST

Product & Item# Price

- Adobe PageMaker 6.0.1**
Ask for item # UPG 0179 CD-ROM/disks....\$149
- Adobe Photoshop 3.0.5 Upgrade**
Ask for item # UPG 0263 (CD ROM/disks)..\$179
- Illustrator 6.0 Upgrade from 5.0**
Ask for item # UPG 0222 (CD-ROM)\$99.95
- Ray Dream Designer 4.0**
Ask for item # GRA 1203\$99.95
- Macromedia Director 5.0 Upgrade**
Ask for item # UPG 0248 (Mac CD-ROM)\$399.95
Ask for item # UP 3348 (Win. CD-ROM)
- Microsoft Office 4.2.1 with FREE Comanche**
Ask for item # BND 1168\$289
- Hewlett-Packard DeskWriter 660c**
Ask for item # INP 0490\$319
- Iomega Zip Drive**
Ask for item # DRI 1050\$219.95
- Symantec AntiVirus for Macintosh 4.0**
Ask for item # UTI 0567\$69.95
- Power User 200 MB Syquest Drive**
Ask for item # DRI 0940 (Drive Only)\$349.95
- FileMaker Pro 3.0 Upgrade**
Ask for item # BND 1143\$79.95*

* Price reflects \$20 manufacturer's mail-in upgrade rebate.
Price before rebate is \$99.95. Limit one rebate per customer.
Expires 7/31/96.

Get a Power User's Tool Kit®

FREE!

The Power User's Tool Kit is packed with powerful programs compiled exclusively for MacWAREHOUSE customers. Some of the programs are shareware, so you can try them free of charge—some authors ask that you pay a small fee (\$8-\$25). The Power User's Tool Kit is FREE when you order from MacWAREHOUSE.

You pay only \$2.00 shipping and handling. If you would like the disk, please ask for Item # AAA 0201.
All programs work with System 7.

Free Upgrade to Adobe PageMill 2.0

When you buy
PageMill 1.0 NOW
for only

\$99⁹⁵*

Ask for item
COM 0325

* Order Adobe PageMill 1.0 after 4/22/96 and get the PageMill Upgrade 2.0 FREE direct from Adobe, shipping charges applicable. Call 1-800-411-8657 for more information, product delivery expected in late August 1996.



Monitor
not included.

132MHz PowerPC 604 Mac O/S!

PowerComputing

Power Center
604/132
Only

\$2,599!

Ask for item
CPU 0147

- ✓ 16MB RAM (expandable to 256MB)
- ✓ 256K Level-2 Cache
- ✓ 1.0GB SCSI Hard Drive
- ✓ 4X CD-ROM Drive
- ✓ 3 Fast PCI Expansion Slots
- ✓ PCI Graphics with 1MB VRAM
- ✓ Extended Keyboard & Mouse

28.8 Internet Access Kit

Includes:

- ✓ Fax/Modem
- ✓ EarthLink Total Internet Access with Netscape Navigator 2.0

*Price reflects \$30 mail-in rebate. Price before rebate is \$129.95.

New Low Price!
\$99⁹⁵*

Ask for item
BND 1397

Compatible w/System 7.5.2!

Suitcase 3.0

Includes
1,000 Fonts
FREE!

Take the work out
of managing fonts!

Upgrade for only
\$49⁹⁵*

Ask for item # UTI 0737

*After \$30 manufacturer's mail-in upgrade rebate. Price before rebate is \$79.95, expires 12/31/96.

NEW! Kensington Turbo Mouse 5.0

only
\$109⁹⁵

Ask for item
INP 0626

KENSINGTON®

New
4-button
design!

Power User 88c MB Removable Drive

• Reads & writes both 44MB & 88MB Cartridges!

only

\$149⁹⁵
Drive only

Ask for item # DRI 0910

5.25" SyQuest Removable Cartridges

Item #	Size	Qty. 1-4	Qty. 5-9	Qty. 10+
ME0 0035	44MB	\$59.95	\$54.95	\$49.95
ME0 0071	88MB	\$64.95	\$59.95	\$54.95
ME0 0146	200MB	\$89.95	\$84.95	\$79.95

POWER USER PRO 1.2 GB HARD DRIVES

only
\$399!

- Features Active Termination
- Super-fast access speeds

Ask for item #
BND 1394



Day-Timer Organizer 2.0

Bring your DayTimer
to your Mac!

\$59⁹⁵
Only

Ask for item
BUS 0636

FREE CATALOG!



To order call toll-free 24 hours a day, 7 days a week

1-800-255-6227

FREE CATALOG SUBSCRIPTION! Check the appropriate box(es) to receive your FREE 1-year catalog subscription(s) and mail this coupon to: 1720 Oak Street, P.O. Box 3031, Lakewood, NJ 08701

Name

Address

Apt.

City

State

Zip

(Expect to receive your first issue(s) within 4-6 weeks.)

☐ Yes, send me my FREE Power User's Tool Kit. Enclosed is my check for \$2.00 to cover shipping & handling.

MW0896

☐ MacWAREHOUSE ☐ MicroWAREHOUSE ☐ Data Comm WAREHOUSE ☐ MacSystems WAREHOUSE

Circle 150 on reader service card

CD RECORDERS

Complete Macintosh external with everything you'll need to make your own CDs - including Mastering software & 1 disk.

2X CD Write	4X CD Write
4X CD Read	4X CD Read
\$839 w/ Corel	\$1199 w/ Corel
\$875 w/ Toast	\$1245 w/ Toast



CD Mastering configuration:
add a 2Gig A/V drive for only \$669
4Gig \$1039

Smart & Friendly 2Xw2Xr Complete Mac kit \$899
Comes with full featured Incat Software & 1 disk
This drive features packet recording, compatible with Retrospect CD-R driver kit.

Pinnacle Micro 2Xw4Xr Complete Mac kit \$989
Comes with Pinnacle CD Creator Software & 2 disks

CD ROM DRIVES

All CD Drives include external drive, cable, & driver software.

NEC	4X	200ms	\$169
Teac	6X	140ms	\$289
NEC	6X	150ms	\$325
Plextor	6X	145ms	\$349
Toshiba	6.7X	120ms	\$295
Philips	8X	195ms	\$299
Plextor	8X	145ms	\$469
Toshiba	8X	145ms	\$429

Bundle Special
Buy any CD ROM with any hard drive and take \$10 off the total price!

CD ROM CHANGERS

Pioneer	4.4X	DRM-624X	6 Disk	190ms	\$319
Pioneer	4X	DRM-1804X	18Disk	300ms	\$1899

CD ROM TOWERS

4 Drive	7 Drive
NEC 4X \$899	\$1489
Sony 4X \$959	\$1599
Pioneer 4.4X \$1199	\$2029
Plextor 4.5X \$1659	\$2829
Teac 6X \$1439	\$2439
NEC 6X \$1659	\$2839
Plextor 6X \$1899	\$3269
Toshiba 6.7X \$1499	\$2549
Toshiba 8X \$1999	\$3449
Plextor 8X \$2519	\$4329



OPTICAL DRIVES

All Optical Drives include external drive, cable, driver software, and 1 FREE cartridge.

230MB	Fujitsu	\$479
650MB	PD ROM combination optical & 4XCD	\$509
2.6Gig	Pinnacle Micro	\$1429
2.6Gig	Maxoptix	\$1999
2.6Gig	Hewlett Packard	\$2219

MEDIA

Tapes	2-4	5-9	10-29
QW3080 [QW3080]	\$32	\$27	\$25
4mm 90M [DAT90M]	\$15	\$10	\$8
4mm 120M [DAT120M]	\$27	\$22	\$20
8mm 112M [DAT112M8MM]	\$15	\$10	\$8
8mm 160M [DAT160M8MM]	\$23	\$18	\$16
Optical Disks	2-4	5-9	10+
128MB [OP128]	\$21	\$17	\$15
230MB [OP230]	\$21	\$17	\$15
650MB 512K [VBR5B2]	\$51	\$47	\$45
650MB 1024K [VBR5B4]	\$51	\$47	\$45
1.3GB 512K [VBR5E2]	\$59	\$55	\$53
1.3GB 1024K [VBR5E4]	\$59	\$55	\$53
2.6GB 512K [OC2.6GIG512]	\$87	\$83	\$81
2.6GB 1024K [OC2.6GIG1024]	\$87	\$83	\$81
SyQuest			
44MB [SQ400]	\$44	\$40	\$38
88MB [SQ800]	\$48	\$44	\$42
105MB [SQ310]	\$56	\$52	\$50
135MB [EZDISK]	\$26	\$22	\$20
200MB [SQ2000]	\$72	\$68	\$66
270MB [SQ327]	\$58	\$54	\$52
Nomai (Syquest compatible)			
44MB [N450U]	\$34	\$30	\$28
88MB [N900U]	\$38	\$34	\$32
Iomega			
100MB ZIP [ZIP100C]	\$23	\$18	\$16
1Gig JAZ [JAZC-1GIG]	\$99	\$95	\$93
Cleaning Cartridges			
4mm [DAT4MMCLEAN]	\$20	\$15	\$13
8mm [DAT8MMCLEAN]	\$29	\$24	\$22
Miscellaneous			
650MB PD disks [LMR650A]	\$58	\$54	\$52
540MB MCD [MCD540P]	\$62	\$59	\$54

HARD DRIVE SPECIALS

		Internal	External
2 Gig	5400rpm	\$440	\$499
2 Gig	7200rpm	\$529	\$589
4 Gig	7200rpm	\$839	\$899
9 Gig	5400rpm	\$1720	\$1820
18 Gig (Dual 9 Gig external)		\$3525	

SCSI HARD DRIVES

SCSI	Speed	RPM	Brand	Model	Wty	Int	Ext
1050MB	9ms	5400	Seagate	ST31051N	3	\$350	\$410
1080MB	11ms	5400	Seagate	ST51080N	3	\$255	\$315
1280MB	12ms	5400	Quantum	FB1280S	3	\$265	\$325
2050MB	8.5ms	7200	Micropolis	MC4221	5	\$545	\$605
2050MB	8.5ms	7200	Micropolis	MC4221AV	5	\$605	\$665
2147MB	9ms	5400	Micropolis	MC4421	5	\$469	\$529
2147MB	9ms	5400	Seagate	ST32155N	5	\$555	\$615
2147MB	8ms	7200	Seagate	ST32550N	5	\$675	\$735
2150MB	8ms	7200	Quantum	XP32150	5	\$635	\$695
4290MB	8ms	7200	Seagate	ST15150N	5	\$999	\$1059
4294MB	8.9ms	7200	Micropolis	MC3243	5	\$859	\$919
4294MB	8.9ms	7200	Micropolis	MC3243AV	5	\$949	\$1009
4300MB	8.6ms	7200	Quantum	XP34300	5	\$889	\$949
9091MB	12ms	5400	Micropolis	MC1991	5	\$1749	\$1849
9091MB	12ms	5400	Micropolis	MC1991AV	5	\$1865	\$1965
9080MB	11ms	5400	Seagate	ST410800N	5	\$1889	\$1989

WIDE SCSI

2050MB	8.9ms	7200	Micropolis	MC4221W	5	\$629	\$735
2050MB	8.9ms	7200	Micropolis	MC4221WAV	5	\$690	\$800
2147MB	8ms	7200	Seagate	ST32550W	5	\$745	\$855
2150MB	8ms	7200	Quantum	XP32150W	5	\$679	\$789
4294MB	8.9ms	7200	Micropolis	MC3243W	5	\$949	\$1059
4294MB	8.5ms	7200	Micropolis	MC3243WAV	5	\$1035	\$1145
4294MB	8ms	7200	Seagate	ST15150W	5	\$1069	\$1179
4300MB	8.6ms	7200	Quantum	XP34300W	5	\$955	\$1065
9080MB	11ms	5400	Seagate	ST410800W	5	\$1999	\$2149
9100MB	12ms	5400	Micropolis	MC1991W	5	\$1839	\$1989
9100MB	12ms	5400	Micropolis	MC1991WAV	5	\$1955	\$2105

SCSI CONTROLLERS

Save \$10 when you purchase any SCSI controller with any SCSI drive.

ADAPTEC	A2940MUW PCI, supports Ultra Wide SCSI, 15 Wide SCSI	\$299
ATTO	NuBus, Bus Mastering, 15 Wide SCSI devices	\$799
	PCI, Bus Mastering, 15 Wide SCSI devices	\$319
	PCI, Bus Mastering, Twin Channel, 30 Wide SCSI devices	\$829

RAID SOLUTIONS

Remus software by Trillium Research - an Adaptec Company.
High speed RAID software for the Macintosh.

Remus RAID 0 or 1 software	\$229
Remus Lite RAID 0, 1, 4, or 5 software	\$349

We custom build RAID systems - including hot swappable solutions.

SCSI ENCLOSURES

HH = 5 1/4" half height, 3 1/2" drives can be mounted in a HH bay with an adapter bracket.

FH = 5 1/4" full height. Open = Open face for tape etc.

part #	drive capacity	power, fans	"high, wide, deep	
3.5CASE	1 3.5"	20W,1	5.5x3.5x8	\$99
HHCASE	1 HH	40W,1	2.3x9.7x10.4	\$79
CDCASE	1 HH CD	40W,1	2.3x9.7x10.4	\$89
FHCASE	1 FH or 2HH	65W,1	4x10x10.5	\$139
DUALCASE	2 FH or 4HH	2x65W,2	11.9x7.5x12	\$250
TOWERCASE	3 FH or 7HH	300W,2	19x9x13	\$439
QUADCASE	4 FH or 8HH	4x65W,3	17.4x8.4x11.7	\$539
GS-2002 holds 5 FH or 8HH or 12 HH CD, has hot swappable redundant 300W power supplies, 2 cooling fans with stop alert				
				\$749

Call for WIDE SCSI and rack mount enclosures.

IDE HARD DRIVES

IDE	Speed	RPM	Brand	Model	Wty	Price
1080MB	11ms	4500	Fujitsu	M1614T	3	\$199
1280MB	12ms	5400	Quantum	FB1280A	3	\$225
1700MB	11ms	4500	Quantum	SR31700A	3	\$249
2167MB	10ms	5400	Seagate	ST32140A	3	\$309
2500MB	11ms	4500	Quantum	SR32550A	3	\$359
540MB	13ms	4200	Toshiba	MK1924FC	1	\$309
810MB	13ms	4200	Toshiba	MK1926FC	1	\$379
1350MB	13ms	4200	Toshiba	MK2720FC	1	\$569

REMOVABLE DRIVE BRACKET



Converts any 3 1/2" hard drive into a removable drive. Great for transportability, data interchange, or security needs. Extremely high quality construction. Metal cartridge and frame, cooling fan.

Unit has SCSI ID select on the cartridge. Qty discounts available.

	System	Extra Cartridge	Extra Frame
SCSI	\$85	\$40	\$54
WIDE SCSI	\$129	\$64	\$75

Weather resistant case to store and transport cartridge \$55



PRINTERS

680C	600x300DPI, color inkjet, 5ppm	\$329
855CXI	600x300DPI, color inkjet, 7ppm	\$499
4MV	600DPI, laser, 16ppm, 11x17 support	\$2829
5M	600DPI, laser, 12ppm	\$1789
5MP	600DPI, laser, 6ppm	\$1029
1600CM	600 black, 300 color DPI, inkjet, 9ppm	\$1959
Color 5M	1200DPI, laser, 8ppm	\$7389

Call for other models.

SCSI TAPE DRIVES

All Tape Drives include external drive, cable, NovaMac software, & 1 FREE tape.

2Gig	Seagate	QIC	\$425
2Gig	HP	DAT	\$719
2Gig	Seagate	DAT	\$709
2-4Gig	HP	DAT	\$799
2-4Gig	Seagate	DAT	\$789
4Gig	Seagate	QIC	\$509
4-8Gig	Seagate	DAT	\$969
4-8Gig	HP	DAT	\$979
7-14Gig	Exabyte	8mm	\$1199

Buy your backup tapes now for best discount pricing!

BACKUP SOFTWARE

Deskape	\$289
Allows you to mount most tape drives as a normal drive on the desktop.	
Dantz Retrospect for Mac	\$Call

NEW 540MB MCD

New 540MB MCD drive is backwards compatible with SyQuest 270MB media. Price includes external drive, cable, drive software, and 1 FREE cartridge.

540MB \$435

ZIP & JAZ



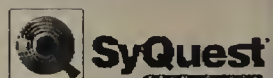
All Iomega drives include external drive, cable, driver software, and 1 FREE cartridge.

100MB Zip	\$195
1 Gig Jaz	\$589

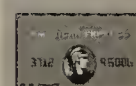
SYQUEST

All SyQuest Drives include external drive, cable, driver software, and 1 FREE cartridge.

135MB	\$199
200MB	\$389
270MB	\$389



Look for us on the Internet at:
<http://www.megaHaus.com>



MegaHaus

2201 Pine Drive, Dickinson, Texas 77539
(713)534-3919 FAX (713)534-6580

Prices & specifications subject to change without notice. Shipping charges are nonrefundable. Returns must be in new condition and in original packaging. Defaced items may not be returnable. No refunds on software or special orders (items not listed in ad.) All refunds subject to 15% restocking fee. All trademarks are registered trademarks of their respective companies. Personal checks held for clearance. We reserve the right to refuse any sale for any reason. Bundle price good only if sold at ad price. ©1996 MegaHaus Inc.

ProDirect

Service•Performance•Price... **ALWAYS**

800-555-1256

Fax 24 hours a day 612-941-1109
International orders call 612-941-1805

- All Macintosh Models
 - Sun Microsystems
 - Hewlett Packard (DOS & RISC)
 - IBM RS 6000
- All drives are setup and tested for your specific platform.

Seagate

80 GB Hawk 2 XL Ultra SCSI 3	\$389	\$330
ms Seek 5400 RPM 128 KBuffer 5 Year Warranty		
80 GB Medalist	\$265	\$325
ms Seek 5400 RPM 128 KBuffer 5 Year Warranty		
4 GB Hawk 2XL Ultra SCSI 3	595	655
ms Seek 5400 RPM 512K Buffer 5 Year Warranty		
5 GB Barracuda 2	695	755
ms Seek 7200 RPM 512K Buffer 5 Year Warranty		
3 GB Barracuda 4	1075	1175
ms Seek 7200 RPM 1024K Buffer 5 Year Warranty		
5 GB Fast & Wide Barracuda	730	830
ms Seek 7200 RPM 1024 KBuffer 5 Year Warranty		
3 GB Fast & Wide Barracuda	1175	1275
ms Seek 7200 RPM 1024K Buffer 5 Year Warranty		
0 GB Elite	1845	1945
ms Seek 5400 RPM 1024 Buffer 5 Year Warranty		
0 GB Elite Fast & Wide	2050	2150
ms Seek 5400 RPM 1024 Buffer 5 Year Warranty		

Day Performance Guarantee on all Hard Drives... Call

MICROPOLIS

2.1 GB M4221AV	625	685
8.5 ms Seek 7200 RPM 512K Buffer 5 Year Warranty		
4.3 GB M3243AV	975	1035
8.5 ms Seek 7200 RPM 512K Buffer 5 Year Warranty		
9.0 GB M1991AV	1895	1995
11 ms Seek 5400 RPM 512K Buffer 5 Year Warranty		

IN STOCK.. MICROPOLIS WIDE AV DRIVES

Day Performance Guarantee on all Hard Drives... Call

Digital Tape Backup



0 GB HPC35470	\$835	\$895
SI 15MB/min., 4mm media,		
5 GB HPC35480	940	995
SI 45MB/min., 4mm media,		
8 GB HPC1533	1099	1159
SI 60MB/min., 4mm media,		
4-48GB SCSI Auto Tape Loader	3195	3295
P1553, 60MB/min., 4mm media		

Exabyte

Capacity	Model	Media	Int.	Ext.
2-5GB	8205XL	8mm	\$1395	\$1485
7-14GB	8505XL	8mm	\$2055	2115

Quantum DLT

Fastest Drives Made Today!

DLT2000XT	\$3399
30GB Capacity•TRANSFER RATE 150 MB PER MINUTE	
DLT4000	\$5435
40GB Capacity•TRANSFER RATE 180 MB PERMINUTE	
DLT4500 • 200 GB Capacity	\$9895
TRANSFER RATE 180 MB PERMINUTE	
DLT4700 • 280 GB Capacity	\$11395
TRANSFER RATE 180 MB PERMINUTE	

DRIVES



SyQuest CARTRIDGES

Capacity	Model	External	Capacity	Price
88 MB	SQ5110C	\$295	44 MB	\$40
135MB	SQEZ135	215	88 MB	45
200 MB	SQ5200	395	135 MB	19
270 MB	SQ3270	295	200 MB	70



PDC2400
• 8 ms Seek • 7200 RPM
• 512K Buffer • 5 Yr. War.
\$695 Internal \$755 External
Conner 21075 Mechanism

PCI/NUBUS FAST & WIDE ACCELERATORS



FWB
incorporated



JackHammer

\$465

Fast/Wide 16BIT SCSI 2 accelerator card for Apple's Nubus based computers. Supports fast/wide SCSI 2 (16 Bit) transfer rates up to 20MB/sec. and fast SCSI 2 (8 Bit) transfer rates up to 10 MB/sec. Full 16 Bit wide support for the latest drives and disk arrays.

PCI JackHammer

\$385

Single channel RISC based PCI to Fast/Wide SCSI 3 accelerator card for Apple's PCI based computers. Ideal solution for your audio, video, prepress, and real time applications. Transfer rates up to 20MB/sec. Formatting software included. 5 year warranty. Call for Disk Array Solutions!

PDI POWERRAIDS™ COMPLETE PLUG AND PLAY RAID SYSTEMS

FEATURING

- FWB RAID TOOL KIT
- FWB JACKHAMMER NUBUS OR
- FWB JACKHAMMER PCI

SUPPORT FOR MOST VIDEO EDITING SYSTEMS INCLUDING RADIUS VIDEO VISION • MEDIA 100 • TARGA 2000 AND OTHER POPULAR VIDEO EDITING AND SOUND SOFTWARE AND HARDWARE.

- 2GB Fast & wide \$1285
- 4GB Fast & wide \$1995
- 8GB Fast & wide \$2596
- 16GB Fast & wide \$5387
- 24GB Fast & wide \$8215
- 40GB Fast & wide \$13700

All drives are 7200 RPM, • 1024K Buffer.
All PowerRaid™ systems have a 5 Year warranty on all equipment and ProDirect's exclusive 90 Day Performance guarantee.



Express PCI

\$345

Single channel RISC based PCI to Fast/Wide SCSI 3 accelerator card for Apple's PCI based computers. Call for Disk Array Solutions! Also available in Dual Channel.



Silicon Express 2

\$425

SCSI 1 & 2 support, transfer rates up to 10.0 MB/sec., supports multiple block sizes, takes advantage of parallel processing capability. Ideal for graphic design, multimedia applications and More!



Silicon Express 4

\$829

Fast/Wide 16 BIT SCSI 2 accelerator card for Apple's Nubus based computers. Supports fast/wide SCSI 2 (16 Bit) transfer rates up to 20MB/sec. Full 16 Bit wide support for the latest drives and disk arrays. Fully compatible with all existing SCSI 1 drives.

REMUS

Disk Array RaidLevel 0 & 1

\$255

HOT! SPECIALS

Quantum 270 MB	\$119	\$179
4500RPM, 14 ms seek, 128K cache, 2 year warranty		
Quantum 535MB	\$165	\$225
9 ms Seek 5400 RPM, 512K Buffer 5 Year Warranty		
PDI 2.2GB Ultra XP	\$525	\$585
7200RPM, 512K Buffer, 8ms seek, 5 year warranty		
Quantum Atlas 4 GB	\$925	\$985
Q34300, 7200, 8 ms seek, 1024K cache, 5 year warranty		
Seagate 9.0GB	\$1895	\$1995
ST410B00, 5400RPM, 11ms seek, 1024K cache, 5 year warranty.		
Toshiba 6x CD ROM	\$295	
120 MS seek, 256K Cache, 1 MB/Sec. Sustained Transfer Rate		

CD ROM & CD WRITERS

Pioneer 4 x 6 Disk CD ROM Changer	\$375
Toshiba 4x CD ROM	\$199
140 MS Seek	
Toshiba 6x CD ROM	\$295
102 MS seek 256 K Cache	
Panasonic PD 4 x/650MB NEW!	\$625
4 x CD ROM & 650MB Optical Drive in one!	
Yamaha 4x CD Writer CDE100	\$1455
Pioneer 4X CD Writer DW-S114X	\$1485
4x CD writer/Reader•1024K Buffer•Multisession	
Pinnacle RCD 5040 2 x CD Writer	\$1099
Combination 2x CD Writer/4x CD ROM 1MB Cache	
Pinnacle Vertex 2.6GB Optical	\$1279
17 MS Seek, 1024K Cache, ISO/ANSI Standard	
All CD Writers come complete with 1 piece of media and Toast Pro software.	

- NEVER A SURCHARGE!
- *NO SALES TAX!
- SAME DAY SHIPPING!
- EXCLUSIVE! 90 DAY PERFORMANCE GUARANTEE!

SCSI HARD DRIVE CABINETS



- PowerStor™ with active termination
- Optional Fixed Daisy Chain Connector... Puts an end to your cable nightmares
- Exclusive On/Off switch... Conveniently located on the FRONT of our cabinet.
- Power and drive activity light.

AV SPEED•PRODIRECT PRICES• 90 DAY PERFORMANCE GUARANTEE!

INDUSTRY LEADING IBM PATENTED MR HEAD TECHNOLOGY PRODUCES THE BEST TRANSFER RATES AVAILABLE TODAY!
IDEAL FOR YOUR MOST INTENSE AV OR DTP NEEDS...AN IDEAL SCRATCH DISK
• 1,000,000 HOURS MEAN TIME BETWEEN FAILURE, 5 YEAR WARRANTY, 1 YEAR ADVANCE EXCHANGE WARRANTY... NEVER HAVE ANY DOWN TIME
• TRUE 7200 RPM SPEED, NOT SIMULATED SPEED LIKE OTHERS' IMITATIONS.

540 MB IBM DESKSTAR	1080 MB IBM STARFIRE
• 9 ms Seek • 5400 RPM	• 8 ms Seek • 7200 RPM
• 128K Buffer • 5 Year Warranty	• 512K Buffer • 5 Year Warranty
\$155 INT. \$215 EXT.	\$279 INT. \$339 EXT.

2.2 GB ULTRA XP

• 8 ms Seek • 7200 RPM
• 512K Buffer • 5Yr. War.

MR Head Technology
All drives come preformatted with FWB for Maximum performance in AV and DTP environments.
\$525 Int \$585 Ext

4.2 GB ULTRA XP

• 8 ms Seek • 7200 RPM
• 512K Buffer • 5Yr. War.

MR Head Technology
All drives come preformatted with FWB for Maximum performance in AV and DTP environments.
\$895 Int \$955 Ext

Quantum

270 MB	\$119	\$179
14 ms Seek 4500 RPM 128K Buffer 2 Year Warranty		
535 MB Performance!	165	225
9 ms Seek 5400 RPM 512K Buffer 5 Year Warranty		
850 MB Value!	185	245
14 ms Seek 4500 RPM 128K Buffer 3 Year Warranty		
1080 MB Atlas	265	325
10 ms Seek 7200 RPM 1024K Buffer 5 Year Warranty		
1280 MB Fireball II	259	319
10 ms Seek 5400 RPM 128K Buffer 5 Year Warranty		
2.2 GB Saturn	545	605
8.5 ms Seek 5400 RPM 512K Buffer 5 Year Warranty		
2.0 GB Atlas	675	735
8 ms Seek 7200 RPM 1024K Buffer 5 Year Warranty		
4200 MB Grand Prix	875	935
8.6 ms Seek 7200 RPM 512K Buffer 5 Year Warranty		
4.3 GB Atlas	895	955
8 ms Seek 7200 RPM 2048K Buffer 5 Year Warranty		

Fast & Wide SCSI AV Drives

2.0 GB Atlas	735	795
8 ms Seek 7200 RPM 1024K Buffer 5 Year Warranty		
4.3 GB ATLAS	985	1085
8 ms Seek 7200 RPM 2048K Buffer 5 Year Warranty		

90 Day Performance Guarantee on all Hard Drives... Call

CONNER

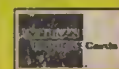
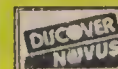
1060 MB	\$255	\$315
9 ms Seek 5400 RPM 512 KBuffer 5 Year Warranty		
2.1 GB C2105	645	705
9 ms Seek 5400 RPM 512K Buffer 5 Year Warranty		
2.1 GB C21075	675	735
8 ms Seek 7200 RPM 512K Buffer 5 Year Warranty		
4.3 GB C4207	950	1010
8 ms Seek 7200 RPM 512K Buffer 5 Year Warranty		

ProDirect, Inc. 10830 Nesbitt Avenue South, Bloomington, MN 55437

8:00am-7:00pm (CST) Mon.-Fri.

10:00 am- 3:00 pm Saturday

All prices are subject to change without notice. Returned orders are subject to a restocking fee. International customers pay all shipping charges. All shipping charges are non-refundable. To return merchandise call for an RMA number. All RMAs must be returned within 10 business days of issuance. Customers are responsible for shipping charges to return product.



Circle 135 on reader service card

Get more out of
your digital camera*.



accessorize, accessorize, accessorize.

***Mfd. by:**
Kodak
Epson
Apple
Casio
Chinon



What's the next-best thing to digital photography? The complete line of high-performance goodies from DC Pro, the leader in digital camera accessories, every one designed with your convenience and creative expression in mind. And here's another good thing: request your free catalog, mention this ad, and we'll send along a free gift.



Your Digital Source

See us at MacWorld/Boston Booth #437

**Call 1-800-522-7835 today
for your free catalog and *free gift!***

Circle 57 on reader service card



The Greatest Thing Since Sliced Bread

No matter how you slice it, our free Consumer Information Catalog is great food for thought.

The Catalog dishes up more than 200 free and low-cost government booklets on subjects you can really sink your teeth into — such as staying healthy, eating right, finding a job, getting federal benefits, using credit, buying a home, helping your kids, taking care of your car, and much, much more.

To get your free copy, send your name and address to:

**Consumer Information Center
Department GT
Pueblo, Colorado 81009**



A public service of this publication and the Consumer Information Center of the U.S. General Services Administration

12 Issues for \$24.

**SAVE
60%**
off the
cover
price

12 Issues for \$24.

☐ Send me 1 year/12 monthly issues of Macworld Premium Utilities Disks. Please bill me.

☐ Send me 2 years/24 monthly issues of Macworld Premium Utilities Disks. Please bill me.

Save 20% off the basic subscription rate. Please bill me.

☐ SAVE EVEN MORE! 2 years/24 monthly issues of Macworld Premium Utilities Disks. Please bill me.

Name _____

Company _____

Address _____

City/State/Zip _____

E-Mail _____

Macworld

Check us out at <http://www.macworld.com>

**FREE
GIFT!**



Macworld editor David Pogue personally assembled some of the most practical, innovative, fun-to-use utilities ever authored. You'll find 14 complete power utilities in this great collection. The 2 disks are both yours—FREE!

Basic subscription price is \$30 for 12 issues. The annual cover price is \$4.95 per issue. For Mexican and Canadian subscriptions, please add \$18 per year for shipping. \$70 for all other foreign countries.

4EKJ1

SAVE
60%
off the
cover
price



BUSINESS REPLY MAIL

FIRST-CLASS MAIL

PERMIT NO. 1167

BOULDER, CO

POSTAGE WILL BE PAID BY ADDRESSEE

Macworld

SUBSCRIPTION DEPARTMENT
P.O. BOX 51666
BOULDER, CO 80323-1666



NO POSTAGE
NECESSARY
IF MAILED IN THE
UNITED STATES



WITH PRICES THIS LOW, BY THE TIME YOU READ THIS, IT MAY BE TOO LATE.

As recently as February of 1996, these Texas Instruments printers were winning major awards. Today, we're selling them at incredibly low prices* So buy now and save money!

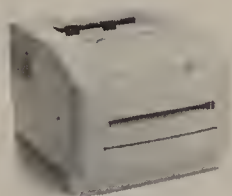


microLaser 600 Affordable PostScript® Solution

- 5 pages per minute
- True 600 x 600 dpi
- 250-sheet tray & straight paper path
- Mac®, Windows® & DOS ready
- PS Level 2 & PCL™5 emulation

MacUser
★★★★

NOW \$679



microLaser PowerPro High Performance Printing

- 12 pages per minute
- True 600 x 600 dpi
- 500-sheet paper capacity
- Mac, Windows & DOS ready
- PS Level 2 & PCL™5 emulation

PC WORLD
TOP 10
PRINTERS

NOW \$1199



All printers come with a 1 year limited warranty and toll free technical support.

**TEXAS
INSTRUMENTS**



1-800-TI-TEXAS
SELECT OPT 2, THEN 1

MacWAREHOUSE

1-800-255-6227



1-800-656-4CDW



1-800-359-1588

PC Connection

1-800-600-9257

Dealer prices may vary. *Offer good while supply lasts. Mac is a registered trademark of Apple Computer, Inc. Windows is a registered trademark of Microsoft Corp. PostScript is a registered trademark of Adobe Systems, Inc. PCL is a trademark of Hewlett-Packard. microLaser is a trademark of Texas Instruments. ©1996 TI.

Circle 266 on reader service card

WE CUSTOM CONFIGURE TO YOUR SPECIFICATIONS!



Monitor and keyboard sold separately



POWERMACS

9500/150	0/0/CD	\$3595
9500/150	16/2GB/CD	\$3995
9500/150	80/2GB/CD	\$4695
9500/150	256/4GB/CD	\$7395
9500/132	16/2GB/CD	\$3899
9500/132	40/1GB/CD	\$3095
9500/120	32/1GB/CD	\$3395
9500/120	16/1GB/CD	\$3095
8500/150	0/0/0	\$3695
8500/150	16/2GB/CD	\$4395
8500/150	80/2GB/CD	\$4850
8500/150	144/2GB/CD	\$5595
8500/132	16/1.2GB/CD	\$3650
8500/132	48/2GB/CD	\$4595
8500/132	80/2GB/CD	\$4995
8500/120	32/1GB/CD	\$3295
8500/120	16/1GB/CD	\$3095
7600/120	80/2GB/CD	\$3795
7600/120	48/1GB/CD	\$3095
7600/120	16/1GB/CD	\$2750
7500/100	32/1GB/CD	\$2550
7500/100	16/1GB/CD	\$2395
7200/120	48/1GB/CD	\$2325
7200/120	16/1GB/CD	\$1975
7200/90	16/1GB/CD	\$1595
7200/90	8/500/CD	\$1025
7200/90	8/0/0	\$995

NUBUS MACS

8100/110	16/2GB/CD	\$3195
8100/100	8/700/CD	\$2395
7100/80AV	16/700/CD	\$1950
7100/80	8/500/CD	\$1595
6100/66	16/500/DOS/CD	\$1040

PERFORMAS

6300	16/1GB/CD	\$2195
6200	8/800/CD	\$1395
6116	8/700/CD	\$1195
5200	8/800/CD	\$1095
580	8/800/CD	\$995



DAYSTAR GENESIS

MP500(4X150)	32/2GB/CD	\$10,700
MP600(4X150)	0/0/0	\$9,400
MP628(4X132)	16/1GB/CD	\$8,500
MP300(2X150)	32/2GB/CD	\$6,600

SPECIAL

9500/150	16/2GB/CD	\$3870
7200/90	8/0/0	\$995
5300CS	8/500	\$1495

DEMO MACS 2YR. WARRANTY

9500/150	16/2GB/CD/V	\$3775
9500/132	16/2GB/CD/V	\$3395
8500/150	16/2GB/CD	\$3695
8500/132	16/2GB/CD	\$3195
7500/100	6/1GB/CD	\$1795
8100/110	16/2GB/CD	\$2595

WORKGROUP SERVER

7250/120	16/1.2/CD	\$2675
7250/120	16/1.2/CD/WWW	\$3195
8550/132	24/2GB/CD/DAT/AS	\$7199
8550/132	24/2GB/CD/DAT	\$6295
8550/132	24/2GB/CD/WWW	\$5699

NETWORK SERVER

500/132	32/2GB/CD/DAT/AS	\$9899
500/132	32/2GB/CD/	\$7899
700/150	48/4GB/CD/DAT	\$13,500
700/150	328/1GB/CD	\$10,500

MONITORS

APPLE 14"/15"	\$299/375
APPLE 1705/10	\$720/930
APPLE 1710AV/20"	\$999/1899
SONY 15"SFII/17"SFII	\$525/895

POWERBOOKS

5300CE	32/1.2	\$3695
5300C	16/750	\$2695
5300CS	16/750	\$2390
5300C	8/500	\$2390
5300CS	8/500	\$1595
5300	8/500	\$1150
150	4/250	\$595
DUO 28DC	12/32DM	\$1495
520 (REF)	4/160	\$695



KINGSTON

4-8-16-32-64-128MB	CALL
512/256 CACHE CD F/7200-8500	\$159/99

PARTS

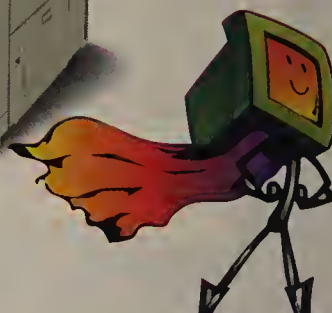
8500/9500 LOGIC BOARD	\$895/1150
8100/110 LOGIC BOARD	\$1150
132/150 PROCESSOR	\$995/1295
ANY PARTS OF MAC	CALL

PRINTERS

APPLE STYLEWRITER 1200	\$199
APPLE STYLEWRITER 1500	\$299
APPLE STYLEWRITER 2200	\$375
APPLE STYLEWRITER 2400	\$299
APPLE STYLEWRITER 2500	\$399
APPLE LASER 360	\$1175
APPLE LASER 4/600	\$799
APPLE LASER 16/600	\$2195
APPLE LASER 12/600PS	\$5999



TRADE YOUR OLD MAC FOR NEW POWER MAC



BIG MAC

Computers

CALL TOLL FREE 1(800) 761-1999

Call for Apple 3rd party products • International Orders, Visa, MC & Amex welcome. Subject to change w/o notice & limited qty. All prices are COD.

Toll Free 800.761.1999

Tel. 310.235.1780

Fax. 310.235.1790

1831 Pontius Ave.
Los Angeles, CA 90025

For current up-to-date pricing and custom configuration, see our web-site at: <http://www.wcn.com>

Circle 101 on reader service card

At PowerTools, we are as dedicated to you as you are to your work. This is why we strive to perform at the highest level and offer quality products at very affordable prices. Whether you are in need of accelerated products to increase your productivity, peripherals to expand the usefulness of a computer or a complete turn-key system, PowerTools is here to provide you with the best service and advice. We're here to help you achieve more...PowerTools, the performance company.

Compare Apples to Apples

Why buy a clone when you can have the real thing!



PowerSource 604 processor card for all 7500, 7600, 8500 & 9500 PPC

160Mhz...\$699 150Mhz...\$599

(with 604 card trade-in) (with 604 card trade-in)

\$799 with 601 trade-in \$699 with 601 trade-in
\$999 with no-trade-in \$899 with no-trade-in

Will not void Apple Warranty!

\$49 PowerPlus 601 accelerator

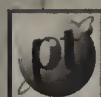
- up to 84Mhz with 3 speed settings
- upgradable to PowerPositive 601 model
- for 6100, 7100 & perform 6115 & 6116

\$149 PowerPositive 604 accelerator

- up to 178Mhz with over 50 speed settings
- same high-tech circuitry as new PPCP
- for all 7600, 8500 & 9500

PowerTools also carries the complete line of quality products from the following manufacturers:

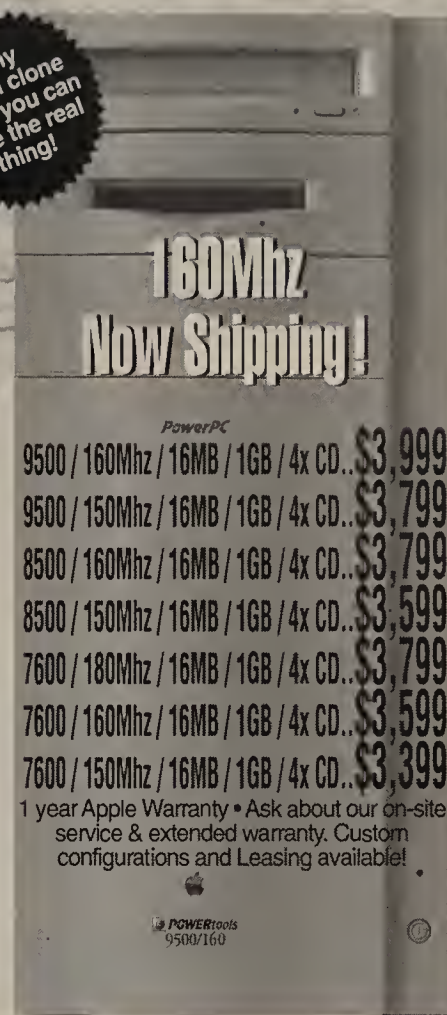
Quantum • Seagate • adaptec • FWB • NEC SyQuest • Iomega • Toray • Pinnacle Micro
Verbatim • Radius • Sony • Portrait Display Labs • Hewlett Packard • Epson • AGFA
Microtek • UMAX • ATi • TrueVision • WACOM DayStar • Global Village • Megahertz • Asanté
Dayna • Apple • Supra • Nikon • TI • and over 10,000 software titles



POWERtools technologies

Tel: 800-891-4307 • 512-892-4925 Fax: 512-476-6399

Apple and the Apple logo are the registered trademarks of Apple Computer, Inc.



**160Mhz
Now Shipping!**

PowerPC

9500 / 160Mhz / 16MB / 1GB / 4x CD..	\$3,999
9500 / 150Mhz / 16MB / 1GB / 4x CD..	\$3,799
8500 / 160Mhz / 16MB / 1GB / 4x CD..	\$3,799
8500 / 150Mhz / 16MB / 1GB / 4x CD..	\$3,599
7600 / 180Mhz / 16MB / 1GB / 4x CD..	\$3,799
7600 / 160Mhz / 16MB / 1GB / 4x CD..	\$3,599
7600 / 150Mhz / 16MB / 1GB / 4x CD..	\$3,399

1 year Apple Warranty • Ask about our on-site service & extended warranty. Custom configurations and Leasing available!

Check our Web Site for daily specials!

PowerMac 9500/150 \$4798



**Diamond Pro
2/tx Monitor
\$2099**

**Adobe
PageMaker
\$499**

Order On-Line

1. Toll-free call at 800-990-5798.
2. Fax us at 512-892-4455.
3. International? Call us in the US at 512-892-4070.
4. Email us your order or request for assistance at sales@blol.com
5. Or try Bottom Line On-Line:
<http://www.blol.com/bld/>
We offer the latest pricing.
6. If you need us after the sale, call customer service at 512-892-4090.



Memory

POWERBOOK MEMORY 190/5300
8/16mb169/369
24/32mb449/699

POWERBOOK MEMORY 160/165C/180/180C
6/8/10mb225/299/399

POWERBOOK MEMORY 520/540
8/16/32mb219/399/699

DIMMs
8MB DIMM99
16MB DIMM229
32MB DIMM359
64MB DIMM875

72 PIN SIMMS
4/8MB SIMM46/99
16/32MB SIMM229/449

30 PIN SIMMS
1/2MB SIMM25/46
4/16MB SIMM65/399

PowerBooks

PB 5300/100 8/500.....1299
PB 5300CS 8/5001999
PB 5300CS 16/7502499
PB 5300C 8/5002599
PB 5300C 16/7502999
PB 5300CE 32/1.1GB3999
Powerbook 190cs1699

Iomega

DRIVES
Iomega Zip195
Iomega Jaz589
Magic Jaz569
MEDIA
Zip 100mb Disk19
Jaz 1.0 gb Disk125
Jaz 1.0gb Disk (5-Pack)499
Jaz 540mb Disk299

Apple

7200/120 16/1GB/CD1898
7200/120 16/2GB/CD2298
8500/120 16/1GB/CD3299
8500/132 16/1GB/CD3898
9500/120 16/1GB/CD3299
9500/132 16/1GB/CD3899
9500/150 16/2GB/CD4798

Office Essentials

Adobe Illustrator 6.0374
Norton Utilities99
In Control80
Now Up-To-Date64
Soft Windows299
PageMaker499
Photoshop499

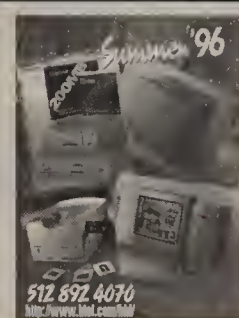
Monitors

Apple 1705 17"739
Apple 1710 17"1049
Apple Multiscan 20"1899
RasterOps MC212099
RasterOps MC17S789
DiamondScan 21tx2099
DiamondScan 17hx980
Pivot 1700969

CD/CDR

Magic 3701 6.7X CD349
CD Recordable Media9
NEC 6XE CD579
FWB CDR1468
Pinnacle CDR1289
Panasonic Portable CDcall

Free Catalog



Keyboards

Kesington TurboMouse105
Kesington Mouse105
Apple Design Keyboard87
Extended Keyboard II153

1-800-990-5798

BOTTOM LINE

DISTRIBUTION

512-892-4070 ■ Fax: 512-892-4455 Hours: M-F 9-9 | Sat 9-4

Circle 63 on reader service card

MACWORLD August 1996 203

Get Free Shipping When You Order On-Line. Surf to: <http://www.blol.com/bld/>

Shipping: \$5, 5 lbs., 2 Days Payment: No surcharge on credit cards. Corporate POs welcome. Tax: Texas residents add 8.25% sales tax. Prices: Items, prices and availability subject to change. Returns: Call for RMA number. Must be in original condition, opened software is non-refundable. Subject to a restocking fee. Original shipping is non-refundable. Apple brand products are not returnable for refund. Bottom Line Distribution cannot be responsible for errors in typography or photography. Customer Service: 512-892-4090. International Sales: Bottom Line Distribution is committed to the needs of the international Macintosh user. We offer discounted rates with DHL. Delivery to most countries is 2 to 3 days. Dealer inquiries are welcome. Language interpreters available. Address: 4544 S. Lamar Blvd., #100, Austin, TX 78745

PRODUCT INDEX

BUSINESS TOOLS

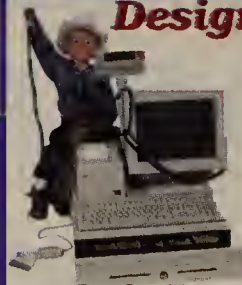


PRODUCT INDEX

Category	Page No.	Category	Page No.
BUSINESS TOOLS . . .204-207		SERVICES & SUPPLIES239-241	
BBS		Computer Insurance	
Bar Code		Computer Repair	
Electronic Paper		Data Recovery	
FAX Back		Furniture	
Input Devices		Service Bureau	
Online Services		Slides	
Point of Sale			
Presentation		SYSTEMS & PERIPHERALS208-229	
Wireless		Cases	
EDUCATIONAL & RECREATIONAL236-239		Computer Insurance	
Astrology		Computer Supplies	
Discount Software		Input Devices	
Games		Leasing Equipment	
Music			
Religion		UPGRADES & MEMORY230-235	
Schools		Memory Upgrades	
GRAPHICS239			
Clip Art		ACCOUNT MANAGERS:800.888.8622	
Grahics Translators		Carol Johnstone415.978.3152	
MOBILE COMPUTING & PDAs . . .235		carol_johnstone@macworld.com	
PowerBook/Newton Light Source		Shannon Smith415.974.7414	
Security System		shannon_smith@macworld.com	
PROGRAMMING & UTILITIES230		Niki Stranz415.978.3105	
Developer Tools		niki_stranz@macworld.com	
Languages		DTP COORDINATOR:	
		Clayton Haberman415.978.3132	
		clayton_haberman@macworld.com	

POINT-OF-SALE

Designed with features to support almost any retail store!



The One That Apple® Uses!
(801) 546-1616

POS•IM is proven:

☒ Easy to install

☒ Flexible

☒ Intuitive

☒ User Friendly

sales@ensign.com

Over 3,000 installations worldwide!

- FEATURES**
- Inventory Management
 - Purchase Orders
 - Credit Card Processing
 - Accounting Interface
 - Bar Coding
 - Serial Number Tracking
 - Easy Training & more!

POS•IM
Point-of-Sale • Inventory Management

Call for a FREE CATALOG!

(800) 409-7678 Ensign

Fax-On-Demand!

You've tried one of these systems and you probably know how it could help your company. Get your promotional information instantly to your customers, 24 hours a day with a PhoneMaker™ Fax-On-Demand system by MicroMat. It will save you time, money and your customers will love it! Try the system and get the facts on Fax-On-Demand by calling 800-829-6227 or 707-838-4231.

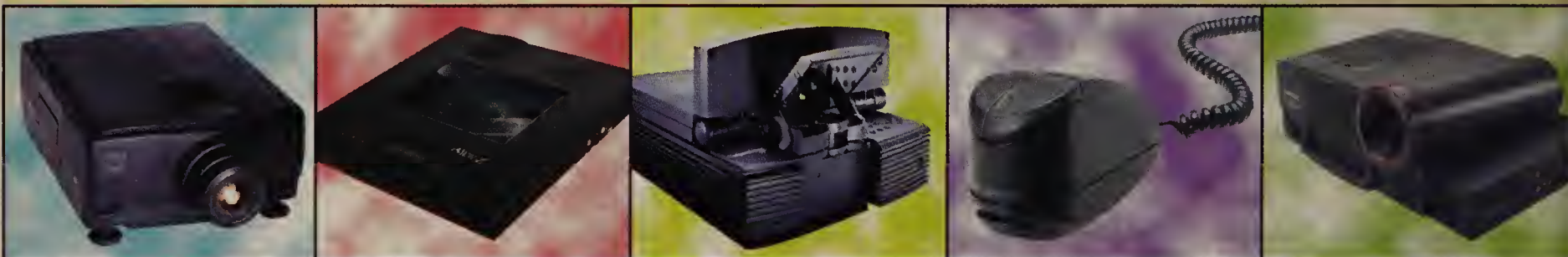
Request document #1007 and try it for yourself!

MICROMAT
COMPUTER SYSTEMS

PhoneMaker

CIRCLE 476 ON READER SERVICE CARD

IF WE DON'T SELL IT, IT'S NOT WORTH LOOKING AT.



PANELIGHT IS YOUR ONE STOP SHOP FOR ALL LEADING BRANDS • SALES, RENTALS, & LEASES • MONEY BACK GUARANTEE.

PANELIGHT OFFERS THE BEST IN SELF-CONTAINED LCD PROJECTORS, PANELS AND ACCESSORIES FOR PC'S, MAC'S AND HIGH-RES WORKSTATIONS FROM THE WORLD'S LEADING MANUFACTURERS: HITACHI, EPSON, IN FOCUS, TOSHIBA, PROXIMA, EPSON, NVIEW, POLAROID AND OTHERS.



CALL THE EXPERTS AT
PANELIGHT DISPLAY SYSTEMS, INC.

IT'S OUR BUSINESS TO ENSURE THAT YOUR BIG IDEAS GET THE ATTENTION THEY DESERVE — NO MATTER WHAT THE VENUE. WE INTIMATELY KNOW AND SELL THE LEADING BRANDS. WE CAN RECOMMEND WHAT FITS YOUR SPECIFIC NEEDS.

CALL NOW FOR OUR FREE, HIGHLY INFORMATIVE CATALOG OF PC VGA/ SVGA, MAC, VIDEO, AND WORKSTATION SOLUTIONS. MOST PRODUCTS CAN BE DELIVERED OVERNIGHT, AND COME WITH A MONEY-BACK GUARANTEE. SO, WHY LOOK ANYWHERE ELSE?

CALL PANELIGHT TODAY!


CALL
PANELIGHT FOR
OUR
FREE CATALOG:
1-800-726-3599.

MON.-FRI., 6:30AM-5:30PM P.S.T.
24-HR. FAX: 415-986-3817
OR E-MAIL PANELIGH@EMF.NET

PANELIGHT DISPLAY SYSTEMS, INC.,
P.O. BOX 190940, SAN FRANCISCO, CA 94119.
OR CALL 415-772-5800.



CIRCLE 481 ON READER SERVICE CARD

INTERNET FOR MAC UNLIMITED & UNCENSORED



\$15⁹⁵

(With strings attached)



\$19⁹⁵

(With no strings attached)

(Finally, a national Internet provider that doesn't discriminate against Macintosh users)

For just \$19.95/month (no sign-up-fees, no hidden extras) IDT will give you unlimited, uncensored Internet access including free Netscape 2.0.

Or get it all for just \$15.95 if you also sign up for IDT's long-distance phone service



— always 20-50% cheaper than AT&T. (And AT&T doesn't even provide Internet access for Mac users).

No other national carrier can make this offer. So what are you waiting for? Call IDT anytime, 24 hours a day.

1-800-245-8000
How smart people communicate™

Rated #1 for network reliability by the Wall Street Journal's *Smart Money Magazine*

CIRCLE 449 ON READER SERVICE CARD

Creating
precision
bar codes
is as easy as
using a font!

PRINTBAR™ BAR CODE FONTS

- Compatible with virtually any Macintosh application.
- Choose from: UPC/EAN/ISBN
 - Code 39 • Code 128 **NEW!**
 - Interleaved 2 of 5 • POSTNET/FIM.
- 90-day money back guarantee.

"This is the best product of its kind,
and it's reasonably priced too."

—MacUser review ★★★★★

EXTRA BONUS
FREE POSTNET & FIM
with any PrintBar Font Purchase

4140 Mother Lane Dr., Ste. 100, Shingle Springs, CA 95682
PH: 916 672-0244 • FAX 916 672-1103
E-Mail us at: info@bearrock.com

**Bear Rock
TECHNOLOGIES**
Bar Code Products
That Mean Business

Money Back Guarantee
On All Products

800 232-7625

Visit our Web Site at: www.bearrock.com

Scanning bar codes
is even easier!

BAR CODE READERS AS LOW AS \$199!

- We offer readers compatible with Macintosh, PC, PS/2, laptops, and serial terminals.
- Instant or remote data entry from bar codes! Scan information into any software application with a wand, CCD, laser gun, badge slot or magstripe reader.
- Don't waste your money on the wrong kind of bar code reader for your situation.
- Our experienced customer service reps can help you choose the correct reader for your needs at the best price!

Start your own custom Online Service!

Create your own
online interface
using graphics
and sound



Online viewers for pictures,
thumbnails and descriptions

Simultaneous upload
and download

- Internet E-mail
- Multi-user Chat
- Fastest file transfers available
- Mac and Windows client software
- Supports Modems, ISDN and TCP-IP
- Unlimited user license

Call 714.453.8095 for a FREE Demo Disk
and more information.

TeleFinder bbs

Spider Island Software
One Venture, Ste. 230, Irvine, Ca 92718 USA
BBS: 714.453.8190 Fax: 714.453.8044
info@spiderisland.com
<http://www.spiderisland.com>

CIRCLE 489 ON READER SERVICE CARD



Bar Code Solutions

Videx data collection
equipment is designed
for work on the go. Cast-metal
cases protect the products and
allow them to work reliably in
harsh environments.

Videx Products...Built Tough...Built to Last!



1105 N.E. Circle Blvd., Corvallis, OR 97330

541-758-0521 • Fax 541-752-5285 • <http://www.videx.com>

CC0613

CIRCLE 545 ON READER SERVICE CARD

CELLULAR WORKS

The Nation's Leading Cellular Phone and Accessory Supplier

Call Today for a **FREE** Catalog.

1-800-822-9675 Dept. AP01

We carry both original
and after market
accessories for every phone:

- Batteries • Cradles
- Eliminator Chargers • Antennas
- Car Adapters • and more!

- Lowest Prices
- Highest Quality
- Widest Selection
- Same Day Shipping

AT&T Wireless Services
Authorized Dealer
<http://www.cellworks.com>

CIRCLE 444 ON READER SERVICE CARD

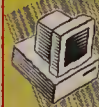
EES Companies, Inc. **800-508-4444**

Mail Order

Tel. (508) 653-6911

Fax (508) 650-1872

info@posoe.com



Distribution

www.posoe.com

MacWorld Boston #5651

Point-of-Sale

INTERNET COMMERCE READY

- Order Entry
- Invoicing
- Fast Cash Retail
- Purchase Order
- Credit Card Processing
- Inventory Control
- Barcoding
- Multi-User
- Complete Systems Available

Demo Available

CIRCLE 492 ON READER SERVICE CARD

Mac-In-Stock™

Bar Code Inventory Control for the Macintosh & Mac OS

Delivering Complete Bar Code Solutions
for Your Inventory Control Headaches!



Newton Joins
the Experts for
One Stop
Shopping and
Friendly Support!

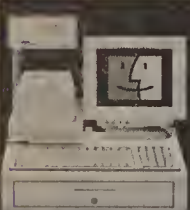
Call Toll Free
and
Inquire about
Our Demo Disk
800-733-7592

The Mac-Barcode Co.

CIRCLE 562 ON READER SERVICE CARD

POINT OF SALE INVENTORY CONTROL

- Retail
- Rentals
- Service
- Manufacturing
- Multi-Location

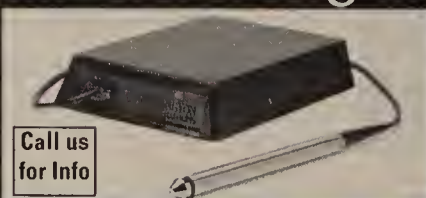


Bar Code/Magnetic Stripe Readers
Receipt Printers • Cash Drawers
Credit Card Auth. & Deposit Software
Download Demos and Interactive Catalog
at our Web Site: <http://www.posdirect.com>
call, fax, or e-mail for a **FREE CATALOG**
(800) 622-7670 sales@posdirect.com
(618) 985-8237 TEL • (618) 985-3014 FAX

Dealer Inquiries
Welcome
30 day MBG
VISA P.O.S. DIRECT

CIRCLE 466 ON READER SERVICE CARD

Bar Coding



Call us
for Info

- Portable & Non-Portable Readers
- Radio Frequency Readers
- PostScript Bar Code Fonts

800-345-4220

**WORTHINGTON
DATA SOLUTIONS**

BAR CODE PRO™

Create EPS graphics for your desktop
publishing documents. Call for a free
demo disk and get the information you
need to make an intelligent
purchasing decision
for Mac or Windows.

**800.619.0399
718.499.6293**
or fax
718.768.3997
<http://www.snx.com>

0 012345 7
SYNEX

CIRCLE 450 ON READER SERVICE CARD

CREDIT CARD

Authorization & Electronic Deposit Software

- Automatically authorizes and deposits all credit card sales -- individually or in batches.
- Integrate with your sales system with AppleEvents, AppleScript & import/export

INTERNET COMMERCE READY

MacAuthorize 800/483-5526

info@tellan.com <http://www.tellan.com>

Tellan Software, Inc

CIRCLE 480 ON READER SERVICE CARD

Hang Ten with Mach^{Ten}

Make Your Macintosh
An Internet Server

Mach^{Ten}... unlimited possibilities
on Classics to PowerMacs.



1. Unlimited Web 'Home' Pages
 2. Unlimited TCP Connections
 3. Unlimited Mail Accounts
 4. Unlimited Internet Addresses
 5. Unlimited Domain Names
 6. Domain Name Service (DNS)
 7. POP Mail Service
 8. Mac/UNIX File Sharing
 9. Mac/UNIX Printer Sharing
 10. Unlimited Possibilities
- MacTMOS and UNIX on a single machine: *The Best Of Both Worlds.*

For more information, or to order call **1-800-6-MACH-10**
Internet: info@tenon.com <http://www.tenon.com>



Tenon Intersystems
1123 Chapala Street, Santa Barbara, CA 93101
Tel: 805-963-6983 • Fax: 805-962-8202

©1995 Tenon Intersystems. All trademarks are the property of their respective owners.

CIRCLE 468 ON READER SERVICE CARD

MACINTOSH TO WINDOWS PEER TO PEER FILE AND PRINT SHARING \$199.

NEW! Personal MACLAN Version 5.5 is the only cross platform networking software that provides peer-to-peer file and printer sharing between Macintosh and Windows or Windows 95. Macs can share files from any Windows PC through Chooser. PCs can mount local Macintosh drives as a logical drive letter.

"Simply the best AppleTalk for Windows product you can buy."
MACUser - November 1995

- Peer to peer sharing of any hard-drive, C-D ROM, or floppy drive
- Print from Windows to any AppleTalk printer
- Print from the Macintosh to any Windows post script printer
- No special software required for the Mac user
- Backup your PC from your Mac
- New 32 bit Apple talk VxD provides better performance
- Compatible with Windows for Workgroups, NetWare and other LANs

Order now
Miramar Systems
800-862-2526

Call for competitive upgrades

email: sales@miramarsys.com www.miramarsys.com

CIRCLE 431 ON READER SERVICE CARD



Design, Print and Apply CD Labels for \$79⁹⁵

*That's
NEATO!*



NEATO
CD LABELER KIT

- 1 **DESIGN** your own artwork
On Your Computer with easy-to-use
NEATO Templates.
- 2 **PRINT** on Any Laser Printer using NEATO
pressure sensitive die-cut labels.
- 3 **APPLY** labels using the NEATO Label
Device... **PERFECTLY EVERY TIME!**

KIT INCLUDES • Label Design
Templates (PC & Mac)
• The Amazing Neato Labeler
• Complete Instruction Guide

800-984-9800

MicroPatent® 250 Dodge Ave. • East Haven, CT 06512
203-466-5170 • Fax 203-466-5178

In Europe: +44 (0)990 561571 • Fax +44 (0)181 932 0480

See us at: <http://www.neato.com>

CIRCLE 475 ON READER SERVICE CARD

LaserMerge[®] Electronic Paper

Does your Printing SUCK up time,
money, paper, toner, & network resources?

**Don't be caught in a vacuum using
obsolete print utilities and tools like...**
WaterMarker, Toner Tuner, Peirce Print Tools, Print
Logger, ClickBook, CardShop, Bar Code Pro...

**Dust off your applications and power
them up with LaserMerge...**

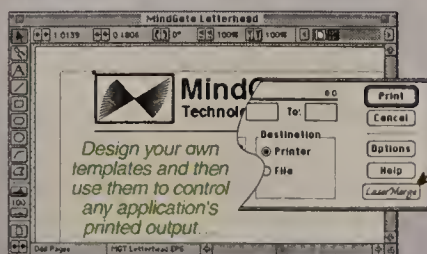
- Print 10x Faster
- Create new Paper Sizes & Layouts
- Make Pamphlets
- Create Bar Codes
- Color & Gray-level Watermarks
- Control Toner/Ink Level
- Sign your Letters and Faxes Electronically
- Create your own multi-ups

**Replace over \$800 of utilities with one
printing extension that does it all!**

LaserMerge is a print extension that sits between any application and any printer driver... It uses **Electronic Paper Templates** that you design as a recipe for how to control any application's printed output...

System 7 required! Works with ANY printer. LaserMerge's miracles require only 32K of memory. QuickDraw GX is NOT required!

List Price: Base \$95 Networked \$15-\$25/unit
Worldwide: (615) 937-6800 Fax: (615) 937-6801
Fax Facts: (615) 937-INFO (4636)



MindGate, LaserMerge, Electronic Paper and their logos are registered trademarks of MindGate Technologies, Inc. All other trademarks belong to their respective owners.

CIRCLE 517 ON READER SERVICE CARD

**With LaserMerge, you won't
have to sweep these
features under the rug...**

- Letterheads
- Forms
- Invoices
- Name Plates
- Badges
- Envelopes
- Cover Pages
- Greeting Cards
- Certificates
- Each layer can be colorized, clipped, moved, rotated, scaled & copied to your design...
- PS Level 2 Forms
- Use the Printer's Disk or Memory
- Even/Odd Prints
- Serialization
- Hi-Resolution Paper
- Import EPS & PICT
- Reduce Network Traffic
- Print Logging
- Over 100 Avery Templates
- Impositions
- 38 Text Commands

**For 101 ways to use LaserMerge,
Call (800) 648-6840
or visit www.mindgate.com**

30-day money-back guarantee

**Competitive Upgrade
from ANY Print Utility for \$40**



MindGate® Technologies, Inc.
164 Oliver Smith Road
Flintville, TN 37335-5335

LOW LOW RATE BUSINESS LEASING 0 DOWN APR 100% TAX DEDUCTIBLE

MACMAN COMPUTER WAREHOUSE
16116 Sherman Way Van Nuys, CA 91406

VIDEO BOARDS

XClaim GA PCI Card
2MB/4MBVRAM \$349/455

Image 128 #9 8MB PCI \$1259
EASyColor 1600/16 PCI Card \$549
IMS Twin Turbo 128M-4MB \$499

POWERUP

Nubus/PCI Accelerator



PowerShop

\$1859

ThunderColor 8/1600 \$455
ThunderColor 30/1152 \$1549
ThunderColor 30/1600 \$1895

SCANNERS

AGFA Arcus II Plus

\$1769

Studio Scan II si \$699
DUO SCAN CALL

Nikon CoolScan LS 10E \$1279
Super CoolScan \$1999

U-MAX Vista S12 \$769
U-MAX PowerLook Pro \$1799
U-MAX PowerLook II \$2869
U-MAX Mirage \$6895
U-MAX Vista S8pro+ \$869
Polaroid Sprint Scan \$1699
Kodak RFS 3570 \$7995
Kodak RFS 2035 \$6495
HP SCAN-JET 4C \$899
Epson ES 1200C Pro \$1149

PRINTERS

LW 12/600 Color \$5995
C.StyleWriter 2200 \$385
StyleWriter 2500 Color \$369
StyleWriter 1500 \$269



HP LaserWriter 4MV \$2649
HP LaserWriter 5MP \$999
HP DeskWriter 850C \$499

FARGO

Fargo Primera Pro \$1285
Fargo Pictura 310E \$4295
EPSON Stylus ProXL \$1649
EPSON Stylus Pro \$499

Wacom Art-Z II 6X8 \$295
Wacom Art-Z II 12X12 \$399
Wacom Art-Z II 12X18 \$649

MEDIA

YAMAHA CDE \$100 II

4 SPEED CD RECORDER \$1569

Verbatim CD-Disk 640MB 74min.....\$8

SyQuest EZ 135 w/cart \$229
SyQuest EZ 135 Cartridge \$19
SyQuest 200MB w/cart \$469

IOMEGA JAZZ 1GB

\$559

Iomega Zip 100MB \$199
Iomega Zip Cartridge 5pak \$69

Olympus Deltis

230MB Optical \$499

1.3Gig Optical \$999

MACMAN COMPUTER WAREHOUSE 800-931-2001

International Orders Tel: 818-901-6250 Fax: 818-901-6260

Internet Address: 102431.2627@COMPUSERVE.COM

Bestellen Sie per Tel/Fax und genießen Sie den Vorteil des tiefen U.S. \$-Kurses.

\$79 a month Lease
7500
100MHz
32MB RAM/2GIG HD
256K Cache/CD-ROM
Apple 1705 Monitor
Extended Keyboard

\$3599



\$95 a month Lease
7600
NEW 120MHz
48MB RAM/2GIG HD
512KCache/CD-ROM
Apple 1705 Monitor
Extended Keyboard

\$4199

7600/120 80RAM/2GIGHD/CD \$3699 7500/100 64RAM/2GIGHD/CD \$3199

7600/120 32RAM/1GIGHD/CD \$2895 7500/100 32RAM/1GIGHD/CD \$2595

\$125 a month Lease
8500
NEW 132MHz
64MB RAM/2GIG HD
Apple 1710AV Mon.
Apple Ext. II Kybd

\$5595



8500/120/CD

48MB RAM/2GIG HD
Apple 1710AV Mon.
Apple Ext. II Kybd

\$4895

\$149 a month Lease
8500
NEW 150MHz
80MB RAM/4GIG HD
Apple 1710AV Mon.
Apple Ext. II Kybd

\$6595

CPU's ONLY
8500/150/CD \$5995
128MB RAM/4GIG HD
8500/150/CD \$4795
48MB RAM/2GIG HD
8500/132/CD \$4595
80MB RAM/2GIG HD

9500/150 80RAM/4GIGHD/CD \$5695 9500/132 64RAM/2GIGHD/CD \$4595

9500/150 48RAM/2GIGHD/CD \$4895 9500/132 32RAM/1GIGHD/CD \$3849

\$169 a month Lease
9500/132
Complete System
80 RAM/4GIG HD/CD
ATI 4MB Graphic Card
Apple 20" Color Display
Apple Ext. II Keyboard

\$7495



NEW 150MHz
9500/150
128RAM/ATI 4MB/CD
4 GIG Fast & Wide HDD
FWB SCSI Accelerator
Sony 20"SF II Display
Apple Ext. II Keyboard

\$8895

SALE MEMORY SALE

8MB DIMM	\$99	4MB SIMM	\$59
16MB DIMM	\$199	8MB SIMM	\$99
32MB DIMM	\$359	16MB SIMM	\$189
64MB DIMM	\$729	32MB SIMM	\$339

CAPACITY	INT	EXT	CAPACITY	INT	EXT
500MB	\$119	\$169	2.5GB Baracuda	\$749	\$799
700MB	\$175	\$249	2.5GB Baracuda	\$795	\$895
1GIG	\$259	\$329	4.3GB Baracuda	\$1099	\$1179
2GIG	\$435	\$495	4.5GB Baracuda	\$1149	\$1249
4GIG	\$899	\$999			

Due to publication time advertising prices may vary. All prices include cash discount. All products carry one year minimum manufacturer's warranty on parts and labor. All Returns must have an authorization Number(RMA). Shipping and service fees are non refundable. No Sales Tax outside of CA. Business hours are 8am to 6pm Mon-Sat.

CIRCLE 455 ON READER SERVICE CARD

WE DO CUSTOM CONFIGURATION GOV'T, UNIVERSITY CORPT. P.O'S WELCOME

POWER BOOKS

5300CE 32/1GIG \$3999
5300c 16/750 \$3099
5300cs 16/500 \$2255
5300cs 24/750 \$2749

5300cs/100
16MB RAM/500MB HD
Global 28.8 FaxModem
Carrying Case
\$2499

5300 8Ram/500HD \$1199
190cs 8Ram/500HD \$1499

MONITORS

APPLE
15" \$379
1705 \$749
1710 \$899
1710AV \$1029
20" \$1895

SONY

Sony 15" SF II Color \$499
Sony 17" SF II Color \$869
Sony 20" SF II Color \$1795

radius

Precision View 17 \$899
Press View 17SR \$1899
Precision View 21 \$2195

7200/120 CD
Free PhotoShop 3.05 CD
24MB/1.2GIGHD
2-Vram/Keybd
17" Color Mon
28.8 Fax/Mod
UMAX UC 630 Scanner \$3295
Complete Graphic System

7200/120 CD
32 MB/2GIG HD
15" Color Mon/Kybd
Color StyleWriter 2500
Free Claris works
\$3149

7200/90 CD
24Ram / 500 HD/28.8 FaxModem
Apple 15" Color Mon/Ext. Kybd
Free Claris Work
\$2695

DIGITAL CAMERAS

Kodak DC50 Zomm Camera
\$985
DC50 5MB Flash Card \$299
DC20 Autofocus Lens \$329
Kodak DC 40 Camera \$685
CASIO QSV10
\$499

Sports 1.5 million pixel resolution, initial continuous burst rate of 5 images in 2.25 seconds
\$9357
AGFA Action Cam
Digital Camera
Fully digital
3CCD/1528x1146
16.5x12.4 mm/Shutter
speed 1/2000 to 1/2 sec.
\$8499
Apple QuickTake 150 \$649

PERFORMAS

5215 8/1GIG/CD \$1499
6116 8/700/CD \$1199
6200 8/1GIG/CD \$1595
6300 16/1GIG/CD \$2099

Mac Storm

Apple In California Since 1988

1-800-594-4007

Int'l (310) 829-9780

Fax (310) 315-1009

Powermacs

Performas

Powerbooks

Apple Printers

Radius

H P

We specialize
in
the lowest
Corporate
Lease Rates

IMS

Number 9

Truevision

Umax

Epson

Nikon

Agfa

NEC

Viewsonic

Microtek

Miscellaneous

Network Servers

Apple Monitors

Sony

Workgroup Servers

We carry
Apple approved
memory upgrades

Call for current Prices and items not listed
We will try to beat any price or lease quote
Prices reflect 3% cash discount and may change
WE ACCEPT VISA/MC/AMEX & DISCOVER
International Sales are Welcome

CIRCLE 440 ON READER SERVICE CARD

SHOPPERS MARKET

"The Intelligent Choice."

VISIT OUR WEB SITE AT
<http://shoppersmarket.com>

POWERMAC 8500/150
32/2 gig CD
\$5199

POWERMAC 9500/150
16/1.2 gig CD
\$4589

1-800-607-2325
VISA, MASTERCARD,
AMEX, DISCOVER ACCEPTED.
GOVERNMENT, UNIVERSITY, &
CORPORATE P.O.'s ACCEPTED!
SALES (310) 842-3700
FAX (310) 842-8130
10875 Washington Blvd., Culver City, CA 90232

PERFORMA		POWERMAC	
5215	8/1 GIG CD	1299	7200/75 8/500 CD
6200	8/1 GIG CD	1299	7200/90 16/500 CD
6205	8/1 GIG CD	1549	7200/120 8/1.2 GIG CD
6220	16/1.2 DID TV	1299	7200/120 16/1.2 GIG CD
6290	8/1.2 GIG CD	1839	7500/100 16/1 GIG CD
6300	16/1.2 GIG CD	2109	7600/120 32/2 GIG CD
6320	16/1.2 GIG CD	2429	8500/120 16/1 GIG CD
POWERBOOKS		MODEMS	
5300CE	117 Mhz 32/1GIG	3899	8500/150 16/1.2 GIG CD
5300CE	117 Mhz 16/1GIG	3599	8500/150 80/4 GIG CD
5300C	100 Mhz 16/750	2699	9500/132 16/1 GIG CD
5300C	100 Mhz 8/500	2199	9500/150 80/4 GIG CD
5300CS	100 Mhz 16/750	2249	7100/80 8/700 CD
5300CS	100 Mhz 16/5000	2099	8100/100 16/700 CD
5300CS	100 Mhz 8/500	1799	8100/100AV 16/1G/CD
5300	100 Mhz 8/500	1195	8100/110 16/2 GIG CD
HARD DRIVES		CUSTOM CONFIGURATION AVAILABLE	
160/240 MB PB 500'S	89/119		
500/810 MB PB 500'S	299/439		
500/700 3.5"	119/159		
1GIG/2GIG 3.5"	249/479		
4 GIG/4 GIG BARRACUDA	849/999		

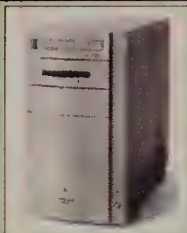
POWERMAC	POWERMAC	LASER
8500/132	7200/120	4/600 PS
16/1.2 gig CD	16/1.2 gig CD	
\$3699	\$2099	\$679
POWERMAC	POWERBOOK	APPLE
7600/120	520	15"
16/1.2 gig CD	4/240	MULTISCAN
\$2849	\$749	\$319
POWERBOOK	POWERBOOK	APPLE
5300C	5300CS	17"
16/750	8/500	MULTISCAN
\$2799	\$1799	\$629

ALL PRICES ARE CASH DISCOUNTED AND ARE SUBJECT TO CHANGE WITHOUT NOTICE
We MATCH! We BEAT! We DEAL!

CIRCLE 435 ON READER SERVICE CARD

VIDEO CARDS	MEMORY
THUNDER 30/1152/1600	749/1099
THUNDERCOLOR 30/1152	1399
THUNDERCOLOR 30/1600	1749
THUNDER IV 1600	1199
VIDEOVISION STUDIO 2.51	2099
TARGA 2000 PCI	3199
TARGA 2000 PCI PRO	4399
NUMBER 9 IMAGINE 128 MB	1149
IMS TWIN TURBO 128 MB	949
MEDIA 100	CALL
MONITORS	PRINTERS
APPLE 15"/1705	319/629
APPLE 1710/1710AV	889/949
APPLE 20" MULTISCAN	1699
SONY 15SX/SFII	439/499
SONY 17 SFII/SE2	869/1049
SONY 20 SFII/SE2	1749/1899
PRESSVIEW 21 SR	3199
PRECISIONVIEW 21	2099
INTELLICOLOR 20 E	1699
PIVET 17" .28	889
PIVET 17" .26	979
NEC XV15/XV17+	499/829
NEC XE17/XE21	1049/1799
RASTEROPS SUPERSCAN MC21HR	1899
SCANNERS	STORAGE
EPSON ES 1200C PRO	1099
EPSON ES 1000	705
PAPERPORT VX	279
UMAX POWERLOOK PRO	1899
UMA S12 PRO	899
UMAX VISTA S8 PRO	749
AGFA ARCUS II	1899
AGFA STUDIOSCANNER IISI	879
IOMEGA 100MB ZIP DRIVE	189
IOMEGA JAZZ 1 GIG ZIP	599
SYQUEST EZ 135	199
SYQUEST EZ 230	299
SYQUEST EZ 750	499
SYQUEST 200MB 5.25"	399
SYQUEST 270MB 3.25"	399
PHILIPS BX CD EXTERNAL	349
PHILIPS CDD-2010/40	949

PCI POWER MACS



7200/120	16/1.2-CD	1895
7200/120	32/2000-CD	2555
7200/120 DOS	16/1.2-CD	2777
7600/120	16/1.2-CD	2777
7600/120	32/2000-CD	3195
7600/120	72/4000-CD	4195
8500/132	16/2000-CD	3755
8500/132	48/2000-CD	4155
8500/132	80/4000-CD	5095
8500/150	16/2000-CD	4375
8500/150	40/4000-CD	4777
9500/150	16/2000-CD	4444
9500/150	64/2000-CD	5195
9500/150	128/4000-CD	6795
7200/90 & 7500/100		CALL
8500/120 & 9500/132		CALL

PERFORMAS

6200/75	8/1000-CD 14.4	1477
6205/75	8/1000-CD 28.8	1597
6290/100	8/1000-CD 28.8	1867
6300/100	16/1000-CD 28.8	2097
5215/75	8/1000-CD	1447

MEDIA 100



DIGITAL VIDEO SYSTEM

MEDIA 100 QX 4950
(with component) **CALL**

POWERSHOP ACCELERATOR 1888

POWERBOOKS



520	4/240	995
520	8/240	1095
520	12/240	1195
520 C/540 C		CALL
5300 CS	8/500	1877
5300 CS	16/750	2347
5300 C	8/500	2347
5300 C	16/750	2799
5300 CE	32/1GIG	3948
190 CS	8/500	1275

POWERBOOK DUO

DUO 2300	8/750	2747
DUO 2300	20/1000/M	3695
DUO DOCK PLUS		747
DUO FLOPPY & ADAPTER		199
DUO 280C	12/320-MODEM	1499

SCANNERS



AGFA ARCUS II	1777
UMAX MIRAGE 11x17	5888
UMAX POWERLOOK II	2297
UMAX VISTA S12 FULL	897
UMAX GEMINI D16	1477
UMAX VISTA S8 LE	799
NIKON COOLSCAN II	1179
NIKON SUPER COOLSCAN	1977
NIKON LS 4500	7999
POLAROID SPRINTSCAN	1477
EPSON 1200 C PRO	1177
EPSON 1000 C	777
SCANMAKER III	1947
35T SLIDE	747

EXTERNAL / DAT DRIVES

SYQUEST EZ 135/200MB	199/399
ZIP DRIVE / JAZZ DRIVE	196/579
WANG DAT 2 GIG COMPLETE	599
SONY DAT 8 GIG COMPLETE	795
RETROSPECT SOFTWARE	95

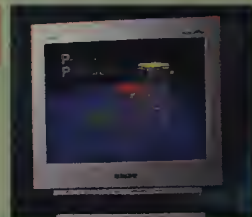
MONITORS

14/15/1710	299/399/919
1705/1710AV MULTISCAN	695/995
APPLE 20" MULTISCAN	1877
RADIUS PRECISION VIEW 17	888
RADIUS PRECISION VIEW 21	2150
RADIUS PRESSVIEW 17SR	1950
RADIUS PRESSVIEW 21SR	3095
RASTEROPS MC 17	899
RASTEROPS MC 20	1449
RASTEROPS MC 21 HR	1995
PORTRAIT DISPLAY PIVOT 1700 .26dp	1039
PORTRAIT DISPLAY PIVOT 1700 .28dp	989



SONY

15 SX	419
17 SF II	875
17 SE II	1095
20 SF II	1755



PCI GRAPHIC CARDS

RADIUS THUNDER 30/1600	1144
RADIUS THUNDER COL 30/1600	1850
EA RESEARCH 1600/16	458
TRUVISION TARGA 2000 PCI	3333
TRUVISION TARGA 2000 PRO	4444
NUMBER NINE IMAGINE 128 8MB	1333
IMS TWIN TURBO 128 8MB	995

WACOM TABLETS

ART Z II 6X8	299
ART Z II 12X12	399
ART Z II 12X18	699

PINNACLE MICRO

OPTICAL VERTEX 2.6 GB	1295
RCD 5040	1195

PRINTERS

STYLEWRITER 2200 (portable)	288
COL STYLEWRITER 1500/2500	295/369
PERSONAL LASER 300	399
COLOR LASER 12/600	5759
COLOR STYLE WRITER 2400	299
HP 5 M	1777
HP 5 MP	999
HP DESKWRITER 320 W /SHEETFEEDER	199
HP 4 MV 11x17	2695
GCC ELITE 600 /600 dpi 10ppm / ethernet	1177
GCC 608 11x17	2155
GCC 616 11x17	2555
GCC 1208 SUPERSIZE	4995
GCC 1208 1200dpi	3555
FARGO PICTURA 310	3444
EPSON STYLUS PRO	525
EPSON STYLUS PRO 11x17	1675

HOT!

PROFESSIONAL MEMORY

DIMM MEMORY 168 PIN

8 / 16 MB	125 / 199
32 / 64 MB	375 / 795
256 / 512 CACHE	117 / 159
1MB / 2 MB VRAM	69 / 177

SIMM MEMORY 72 PIN

4 / 8 MB	57 / 99
16 / 32 MB	199 / 399
256K / 512K VRAM	19 / 39

PB 500 SERIES

4 / 8 MB	158 / 257
16 / 32 MB	399 / 777

PB 5300 SERIES

8 / 16 MB	227 / 397
32 / 48 MB	795 / 1095

DUO MEMORY

8 / 14 / 20	255 / 420 / 520
28 / 36 48	730 / 895 / 1150

GREAT BUY! FACTORY REFURBISHED

RADIUS INTELLI COLOR 20E	1275
SUPER MAC 21T XL	1395

• GOV'T, FORTUNE 1000 & SCHOOL P.O.'S., WELCOME • LEASING AVAILABLE •
• WE GUARANTEE BEST AVAILABILITY, PRICE, SERVICE, DELIVERY & SUPPORT •
• WE SPECIALIZE IN CUSTOM MADE CONFIGURATIONS SINCE 1988 •

CIRCLE 495 ON READER SERVICE CARD

NEW LOW PRICES EVERY DAY

POWERMACS

9500/150/132mhz 80-4GCD 150 5699	8500/150/132/120 80-4GCD 150 5595
16-2GCD 150 4449	16-2GCD 150 4349
16-1GCD 132 3399	16-1GCD 132 3495
64-2GCD 132 4299	64-2GCD 120 3699
16-1GCD 120 Call	16-1GCD 120 2949
16-2GCD132(R)2799	16-1GCD120(R)2799

**SAVE
ON ANY**

128-2GB/256-4GB 80-2GB / 0-0 CD 7200/120 08-1GCD 1749 16-1GCD 1849 48-2GCD 2299 7200/90 16-1G CD 1449 8-500 CD 1189 8-500CD(R) \$949	32-2GB / 0-0 CD 80-1GB/ 144-4GB 7600/120 16-1G CD 2649 48-1G CD 2999 64-2G CD 3379 7500/100 32-1GCD 2399 16-500CD Call 16-1GIGCD(R)1849
---	--

MAC CITY

THE MAC STORE

Hardware Hotline (800)505-8991

Tel: (818) 505-8991-Fax:(818) 505-8992

INTERNATIONAL ORDERS C.O.D Welcome
Visit Our Web Site: <http://www.maccity.com/bestprice>
QUALITY SERVICE AND VALUE SINCE 1987
NO SALES TAX OUTSIDE CALIFORNIA
ALL PRICES REFLECT C.O.D CASH DISCOUNT
Prices are subject to change without notice
11026 Ventura Blvd STUDIO CITY, CA 91604
WORLDWIDE NEXT AND SAME DAY SHIPPING
Japan-Taiwan-Israel-Brazil-Dubai
London-France-Germany-Spain
Austria-Denmark-Sweden-Italy
Switzerland-South Africa-Belgium
Singapore-New Zealand-Australia
Hong Kong-Indonesia-Malaysia

**WE GUARANTEE QUALITY AND BEST PRICE
RETAIL &
WHOLESALE STORE OPEN TO THE PUBLIC**

CIRCLE 442 ON READER SERVICE CARD

POWERBOOKS

NEW CD POWERBOOKS CALL

5300	8-500	Call
5300CS	8-500	1779
5300CS	16-500	2059
5300C	8-500	2269
5300C	16-500	2469
5300CE	32-1G	3749
190CS	8-500	1349
190	8-500	999
540C		
520C	12-320	CALL
520	8-250	CALL
150	8-250	899
	8-250	699

Megahertz
28.8 Int
\$259



DUO 2300C	8-750	2689
DUO 280C	12-320	1599
DUO 280	4-240	499
DUO DOCK		CALL

TELEPORT
28.8 FAX
\$199
PCI 28.8 \$319

8MB/16MB/32MB -\$179/\$349/ ?

Apple 600e CD \$279

PERFORMA

MONITOR, KEYBOARD & SOFTWARE

6320	16-1.2G CD	2449
6300	16-1.2G CD	2099
6290	16-1.2G CD	1879
6200	08-1G CD	1549
6200	16-1G CD(R)	1299
6205	08-1G CD(R)	1579
5215	08-1G CD	1399
6116	08-700CD	1199
6116	08-700CD(R)	879
631	08-350CD(R)	749
640Dos	12-500CD (R)	899
575/580		599/699

**TRADE YOUR OLD MAC
FOR A NEW MAC**

MEMORY

LIFETIME
WARRANTY

9500/8500/7500/7200-DIM	
64MB/32MB	699/349
16MB/8MB	189/99
8100/7100/6100/Performa	
32MB/16MB	349/189
08MB/04MB	95/59
POWERBOOK 5300	
08MB/16MB	189/349
1MB V-RAM	65
HARD DRIVES	
4GGB/2GB	879/499
1GB/500MB	249/139
ZIP 100MB	\$189
JAZ 1GB	\$559

omega ZIPP 100MB \$189
JAZ 1GB \$559
FWD DISK HAMMER DRIVES CALL

INTERNATIONAL ORDERS C.O.D Welcome
Visit Our Web Site: <http://www.maccity.com/bestprice>

QUALITY SERVICE AND VALUE SINCE 1987
NO SALES TAX OUTSIDE CALIFORNIA
ALL PRICES REFLECT C.O.D CASH DISCOUNT

Prices are subject to change without notice
11026 Ventura Blvd STUDIO CITY, CA 91604
WORLDWIDE NEXT AND SAME DAY SHIPPING

Japan-Taiwan-Israel-Brazil-Dubai
London-France-Germany-Spain
Austria-Denmark-Sweden-Italy
Switzerland-South Africa-Belgium
Singapore-New Zealand-Australia
Hong Kong-Indonesia-Malaysia

**WE GUARANTEE QUALITY AND BEST PRICE
RETAIL &
WHOLESALE STORE OPEN TO THE PUBLIC**

CIRCLE 442 ON READER SERVICE CARD

Style Writer
1200(r)\$149

PRINTERS

Apple	
Pro 4/600-16/600	725/CALL
Select 360/300	1079/399
Styl 2500/1500	359/259
Styl 2400/2200	295/295
Hewlett Packard	
HP 4MV/5mp	2679/959
HP 850/855c	469/509
HP Scanjet 4c	919
Epson	
Stylus Pro	499
Stylus II	299
Stylus Pro xl	1699
ES-1200C	919

VIDEO CARDS	Thunder Color 30/1600 \$1699	Targa 2000 PCI \$CALL
	Thunder Color 30/1152 \$1399	Video Vision Studio \$2295
	Thunder 4GX1600 Nubss\$1849	Thunder 30/1600 \$1149

Monitor

NEC	
XV17/XV15	
RADIUS	
SUP21TXL(R)	1299
Intel 20e(R)	1299
Apple 14"/15" mult(r)	199/259
Apple1705/1710	649/1929
Apple 20T/20(F)	1779/1199
Sony 20Sf2	1749
Sony 17sf 2/15sf2	859/479
Viewsonik 17"/21"	CALL
Microtek Call	
UMAX	
Vista S12	879
Vista S6/S8	CALL
AGFA Arcus II	1799
NikonCoolscan	919

Power Macintosh

Performa



7200/75	8/500CD	\$ 979
7200/90	8/500CD	CALL
7500/100	16/500CD	2098
7500/100	16/1GBCD	2259
8500/120	16/1GBCD	3049
8500/120	16/2GBCD	3329
9500/120	16/1GBCD	2799
9500/132	16/1GB/CD	3589
9500/132	16/2GBCD	3689

All New!

7200/120	8/1.2/CD	\$1759
7200/120	16/1.2/CD	2098
7200/120	PC/8/1.2/CD2739	
7600/120	16/1.2/CD	2749
8500/132	16/2GB/CD	3579
8500/150	16/2GB/CD	4389
9500/150	16/2GB/CD	4489

PowerBook

Lower
Prices!

190CS/66	8/500	1419
5300CS	8/500	1839
5300CS	16/750	2289
5300C	8/500	2287
5300C	16/750	2739
5300CE	32/1.1	3889
2300C/100	8/750	2749
2300C/100	20/1.1 MDM3599	



5215CD	8/1GB/CD	1559
6200CD	8/1GB/CD	1569
6205CD	8/1GB/28.8	1659
6230CD	16/1GB/Mpeg	2099
6290CD	16/1.2GB14"	1819
6300CD	16/1.2GBCD	2079
6320CD	16/1.2/MPEG	2455

WorkGroup Svrs



All New!

6150/66	16/1.2/INTRNT	2099
7250/120	16/1.2GB/CD	2669
7250/120	16/1GB/CD/AS	3389
8550/132	24/2GB/INTRNT	5559
8550/132	24/2GB/CD/AS	5949
8550/132	24/2GB/DAT/AS	6929
500/132	32/CD/BASE	7599
500/132	32/2GB/DAT/CD	9494
700/150	32/1GB/CD	10335
700/150	48/4GB/DAT/CD	13039

Apple Printers

StylWrtr	1500/2500	269/359
LsrWrtr	4/600PS	819
LsrWrtr	360 W/Toner	1079
LsrWrtr	16/600 W/Tnr	2089
LsrWrtr	12/600Ps	5839

FOURB TECHNOLOGIES

ORDER NOW AND SAVE

New Toll Free:

1-888-622-8646

Customer Service: 310.444.1122 Facsimile: 310.444.1130

MEGA	MEGA	APPLE
ZIP100	JAZ 1GB	15"
\$189	\$529	\$289

GLOBAL VILLAGE	Performa	PwrBk
TELEPORT	6300	150
PLATINUM	\$2079	\$589

PC	PwrBk	SuperMatch
Compatibility	520C	21TXL
586/100	\$1087	\$1189

Apple Monitors

MltplScan 14	Lowest!
MltplScan 15	Lowest!
MltplScan 1705	699
MltplScan 1710	888
MltplScan 1710AV	988
MltplScan 20	CALL

Gov't Schools Fortune 500 P.O.'s Welcome, FEDEX
Next Day Avail. Visa, MC, AMAX accepted. Prices are
Cash Discounted for COD Cash/Cashier Check.

CIRCLE 477 ON READER SERVICE CARD

SONY



15SX	15"	389
15SF2	15"	458
17SF2	17"	829
17SE2T	17"	965
20SF2	20"	1655
GDM-2000CT	New!	3099

NEC

XV 15+	469
XV 17+	779
XE 17/XP 17	989/1039
XE 21/XP 21	1679/1939

GCC

Elite XL608	2199
Elite XL616	2479
Elite XL808	2789
Elite XL1280 24MB	3889
Elite XL1280 Super Size	5519

Global Village

Teleport Platinum	189
PwrPort Gold PC	168
PwrPort Platinum PC	319
PwrPort Platinum Pro	459

WACOM

ArtPad II 4X5	129
ArtZ II 6X8	297
ArtZ II 12X12	398
ArtZ II 12X18	685

Apple Scanner



Color One 600/27	548
AGFA	
Arcus II	1799
DuoScan	4999
StudioScan IIsi	899

EPSON

ES-1000C	699
ES-1200C PRO-MAC	1129
Stylus Color	379
Stylus Color Pro	489
Stylus Color Pro XL	1689

HEWLETT PACKARD

DeskWriter 600	238
DeskWriter 660C	349
DeskJet 855CXI	484
DeskJet 340 MAC	318
DeskJet 1600CM	1889
LaserJet 5MP	969
LaserJet 4M+	1839
LaserJet 4MV	2639
LaserJet 5M New!	1729
Color LaserJet 5M	6945
LaserJet 5Si MX	3729
ScanJet 4P Mac	489
ScanJet 4C Mac	888

MICROTEK

ScanMaker E3	358
ScanMaker E6	557
ScanMaker III	Lowest!

All Models Available

ASK ABOUT OUR BUSINESS LEASING & TRADE-INS

POWERMACS

9500	
132Mhz 16/1G/CD	\$3590
120Mhz 16/1G/CD	\$2975
8500	
150Mhz 16/2G/CD	\$4290
120Mhz/132Mhz 16/1G/CD	\$2945/\$3399
7600/120 16/1.2G/CD	\$2745
7500/100* 16/1G/CD	\$1995
7200	
120Mhz 8/1.2G/CD/DOS Compatible	\$2645
120Mhz 8/1.2G/CD	\$1789
90Mhz 16/500/CD	\$1299
8100/110 16/2G/CD*	\$2980
8100/110 8/0*	\$2390
7100/66/80 & 6100/60/66	CALL



INNOVATIVE COMPUTER & NETWORKING INC.

POWERBOOKS

5300c 16/750	\$2695
5300cs 16/750	\$2245
500 Series	CALL
Duo2300c 20/1G/M	\$3599

PERFORMAS

6320/120 16/1G/CD/TV-VI/15"/KB	\$2290
6116 8/700/CD*	\$765
5215 8/1G/CD/M/Built-in 15"/KB	\$1499
5200 8/800/CD/Built-in 15"/KB	\$1325
6200 8/800/CD/14"/KB	\$1299

Duo2300 UPGRADE KIT
From Duo 200 to Duo 2300 (PPC 603e, 100Mhz)
\$1095

APPLE PARTS

DOS COMPATIBLE CARDS (PCI)

586/100MHz/8MB RAM/7"	\$795
PENTIUM/100MHz/8MB RAM/12"	\$995
9500 LOGIC BOARD	\$1239
8500 LOGIC BOARD	\$795
132Mhz 604 PROCESSOR	\$950
120Mhz 604 PROCESSOR	\$795
8500 POWER SUPPLY	\$195
Q840AV LOGIC BOARD	\$595
Q800 LOGIC BOARD	\$495
Q950 LOGIC BOARD	\$595
1.44 Floppy Drive	\$125

9500/150Mhz

16/2GB/CD
L2 Cache/Video

\$4290

POWERBOOK

5300

8/500

\$1299

**TRADE IN
YOUR OLD MAC
FOR A
NEW MAC**

POWERBOOK

5300ce

32/1.1G

\$3795

POWERBOOK

150

4/240

\$599

UPGRADES

WITH ORIGINAL APPLE LOGIC BOARD & PARTS

Quadra 950, 900 to Workgroup Server 9150/120	\$1550
Workgroup Server 8150/80/110 to Workgroup Server 8550/132	\$2345
Quadra800(Add \$100 for Q800), 840AV & 8100s to 8500/120/132	\$1690-2090
120/132MHz 604 Processor (8500 & 9500) to 150 MHz 604 Proc.	\$845-1100
75/90MHz 601 Processor (7200) to 120 MHz 601 Proc.	\$650-750
PowerMac 7200 to 7600/120	\$1490
Centris, Quadra 610, 650 & 660 to 6100 & 7100	Call
Performa 630 & Quadra 650 to 6200/75MHz	\$595
Powermac 8100/80, 8150/80 to 8100/100/110	Call

FOR THE MOST RECENT PRICING VISIT OUR WEB SITE:
<http://www.icni.com>
icni@icni.com

WORKGROUP/NETWORK SERVERS

WGS 8550/132 24/2G/CD	\$5490/\$5990
WGS 7250/120 16/1G/CD	\$2625/\$3590
NWS 700/150* 48/4G/CD/DAT-2	\$12290
NWS 500/132 32/CD	\$7290

DEMOS

Q950 4/0	\$975
Q840AV 8/250	\$1090
Q800 8/230	\$890
Q650 8/250/CD	\$969

ATTO Technology

NuBus/PCI Fast/Wide SCSI-2 ACCELERATORS

Express PCI SC	\$339	Express PCI MC	\$699
SiliconExpress IV	\$699	ExpStripe RAID-0	\$199



(310) 445-6600

FAX: **(310) 445-6611**

FAX TOLL FREE FROM JAPAN: **00-31-114211**

2045-B S. Barrington Ave, LA, CA 90025

MONITORS

APPLE 14" Multi	\$259/209*
APPLE 15" Multi	\$389/289*
APPLE 1705	\$699
APPLE 1710AV	\$959
APPLE 20" Multi	\$1825
SONY, NEC & RADIUS	CALL

PRINTERS

APPLE LW 4/600	\$799
APPLE LW 16/600	\$2090
APPLE Color 12/600	\$5590
APPLE SW 2500	\$379
APPLE SW 2400	\$299
APPLE SW 2200	\$299
APPLE SW 1200	\$189
GCC 600e 600dpi/10ppm/Ethernet	\$1189
HP, EPSON & GCC	CALL

PERIPHERALS

Spigot PowerAV Full Frame Video Capture/Nubus	\$690
SyQuest EZ135	\$229
Supra Fax/Mod Express 28.8	\$187
BEST DATA 28.8 w/Voice Mail	\$169
UMAX S6 600dpi, 24Bit, Full Photoshop	\$599
APPLE SCANNER ONE	\$170

Prices Subject to Change Without Notice • Call for Latest Prices
All Prices reflect 3% Cash Discount • *: Refurbished

Ad # MW0896 a **Sales (818) 787-3282**
Export (818) 787-9314/0816

COMPU.D
International, Inc.

FAX (818) 787-5555 FAX Back 787-4548
Internet: http://compu-d.com
E-Mail: csales@compu-d.com

Power Mac

Workgroup Servers	CALL
9500/150 16-2GB CD	\$3995
9500/132 16-2GB CD	\$3395
9500/132 0-0	\$2495
9500/120 16-1GB CD	\$2895
9500/132 32-4GB CD	\$4145
8500/120 16-2GB CD	\$3195
8100/100 16-1GB CD	\$2095
7500/100 16-1GB CD	\$1795
7200/90 16-500 CD	\$1045
7200/75 8-500 CD	\$939
6100/66 8-500 CD	\$825
Apple TV/DOS Card	\$219/249
1/2GB Hard Disk	\$239/449
4/9GB Hard Disk	\$825/1995

1-800-929-9333

PowerBook

5300c 16-750	\$2695
5300c/5300cs 8-500	\$2185/1695
540C 12-320 Modem	\$1895
190/190cs 8-500	\$995/1395
150 4-120/8-250	\$545/745
DUO 280/230 4-240	\$995/645
DUO 2300C 8-750	\$2695
DUO 2300C 20-1GB	\$3195
DUO 280C 12-320 Modem	\$1895
4/8MB Memory	\$75/165
16/32 MB Memory	\$249/575
810MB/1.1GB IDE 2.5"	\$429/499

radius Displays & Cards

PressView 21SR 21"	\$3095
MultiView 21 21"	\$1699
VideoVision Studio 2.0/1.0	\$2395 1495
IntelliColor 20e 20" Trinitron	\$1695
SuperMac 17" T/20" Color Rndtnd.	\$469/785*
LeMans GT /Spigot II Tape	\$575/299
Thunder 30-1152/30-1600	\$799/1199
Thunder Color 30-1152/30-1600	\$1595/1995
IVGX 1152/1360/1600	\$795/895/1095
Precision Color 8-1600	\$425

NEW Products

7200/120 16/1GB CD \$1845	8500/150 16/2GB CD \$4295
7600/120 16/1.2GB CD \$2695	9500/150 16/2GB CD \$3995
8500/132 16/1GB CD \$3395	

8/16/32MB Memory \$95/195/295

***Performa 6200**
8/1GB CD
\$895*

***Performa 6116**
8/700 CD
\$695*

5300c/100 16/750 **\$2695**

5300cs/100 16-750 **\$2195**

5300ce/117 32/1GB **\$3595**

520 8/240 **\$795**

520C 12/320 Modem** **\$1495

68LC040 /Ethernet Port/ PPC Upgradable to 117MHz

All Prices Are Based on C.O.D. Order & Subject To Change!
* Factory Reconditioned with Warranty We accept:

Fast Worldwide Delivery **FedEx** **DHL** **VISA** **MasterCard**

14.4 **\$119** **Megahertz** **28.8** **\$249**
Fax/Modem For 5300 & 190

STAR Portable Printer **\$99**
Color & Mono laser quality, 35 Fonts, 382cps, 360dpi

Displays & Cards

Targa 1000/2000 PCI	\$2596/3285
Targa 2000 PCI Pro	\$4290
Targa 2000 NuBus	\$2740
radius VideoVision Studio 2.0	\$2395
IMS Twin Turbo 128M/128S	\$485/Call.

CIRCLE 434 ON READER SERVICE CARD

MacGlobal

SYSTEMS AND PERIPHERALS • SALES AND SERVICE

Performas	PowerBooks
410/466/476 Call	160/165/170/180 Call
550 5/160 \$799	150 4/240 \$550
580 5/500/CD \$800	520 4/240 \$750
631 8/500/CD \$650	520C 4/240 \$1,100
6116 8/700/CD \$675	540C 4/320 \$1,750
5200 8/500/CD \$1050	

Power Macs	Quadas
7200 8/500 Call	630 8/250 Call
7500 16/500 Call	650/800/840/950 Call
8500 16/500 Call	

Printers
Stylw II \$185.00
Stylw 1200 \$175
Laser 300 \$285
Laser 320 \$490
Laser 4/600 Call

Monitors
14" App. Color+ \$235
15" App. Multi. \$275
17" Std. \$725
20" GS \$540

TOP DOLLAR paid for memory, PowerBooks and CPUs!

Call us!
[800] 722-8864
Phone: [408] 268-3300
Fax: [408] 997-1400

MacGlobal

CIRCLE 479 ON READER SERVICE CARD

KIWI COMPUTERS
1-800-334-KIWI

SAVE ON FACTORY REFURBISHED MACS

Performa 630 4/250 w/14" Multiscan.....	\$699
Performa 631 8/500 CD w/14" Multiscan.....	\$799
Performa 631 8/500 CD w/15" Multiscan.....	\$875
Performa 640 DOS 12/500 CD w/15" Multiscan.....	\$1199
Performa 6116 8/700 CD w/14" Multiscan.....	\$899
Performa 6116 8/700 CD w/15" Multiscan.....	\$975
Performa 5200 and 5215.....	Call
Performa 6200 8/1 Gig CD w/15" Multiscan.....	\$1299
Performa 6220 16/1 Gig CD TV w/15" Multiscan.....	\$1499

PowerMacs listed below do not include monitor or keyboard.

PowerMac 7200/90 8/500 CD.....	\$1199
PowerMac 7200/90 16/500 CD.....	\$1299
PowerMac 7500/100 16/1 Gig CD.....	\$1949
PowerMac 8500/120 16/1 Gig CD.....	Call
PowerMac 6100, 7100 and 8100.....	Call
Powerbook Duo 230 4/120.....	\$549
Powerbook 150 4/250.....	\$625
Powerbook 520 4/240.....	\$749
Powerbook 520c 4/240.....	\$1099
Apple 14" Multiscan Display.....	\$239
Apple 15" Multiscan Display.....	\$289
Stylewriter 1200.....	\$149

Visa/Mastercard/American Express No Surcharge.

Refurbished products have a 90 day manufacturer's warranty.

Returns subject to a 15% restocking fee. Prices subject to change without notice.

Kiwi Computers, PO Box 67381, Los Angeles, CA 90067

Call Toll Free: 1-800-334-5494

International (310) 553-4507 Fax (310) 286-9667

E-mail: KIWI.COMP@AOL.COM

Hours: Mon-Fri 8am-5pm, Sat 9am-2pm PST

Better Business Bureau Member.

CIRCLE 404 ON READER SERVICE CARD



Computer Pros is Your Macintosh Source.

Ask for Our Latest Low Prices!

POWER MACINTOSH

7200 75MHz 8/500/4xcd	\$1009
7200 90MHz 16/500/4xcd	1540
7500 100MHz 16/1GB/4xcd	2450
8500 120MHz 16/1GB/cd	3390
9500 132MHz 16/1GB/cd/	
Video 2MB	3465

PERFORMAS

6200 8/1GB/cd with 15" color	1590
monitor & Keyboard	1590
5215CD 8/1GB/4xcd/15" monitor	1550
& keyboard/mse	1550
6300CD 100MHz 16/1.2GB/15"	
monitor/28.8/4xcd	2490

PRINTERS

Stylewriter 2400 color printer	\$339
Stylewriter 1200	180
Apple Select 360	1189
Laserwriter 16/600 3MB RAM	2228
Laserwriter 4/600	819
Star 54144 color (mac)	129
Epson Stylus Pro XL	1699
GCC Elite XL 1200	3800
GCC Elite XL 300	2799
GCC Elite XL 300	2199
H.P. Deskwriter 660C	369
H.P. Laserjet 5 MP mac/IBM	1089
H.P. Deskjet 8500 mac/IBM	515

MONITORS

Apple 20" Multiscan	\$1949
NEC XV17	880
Supermatch 17xi	869
Viewsonic 17" GA	690

KEYBOARDS

Apple Extended Keyboard	\$145
Apple Design Keyboard	75
MACally Extended Keyboard	75

DIMMS & V-RAM

4MB	\$215
8MB	260
16MB	375
32MB	795
V-RAM For PowerMac (1MB)	79
V-RAM For 9500 (2MB)	375
512 Level II Cache	399

POWERBOOK

4MB for Powerbook 5300	\$199
8MB for Powerbook 5300	299
16MB for Powerbook 5300	550
32MB for Powerbook 5300	1150
Fax Modem for Pwbk 520 & 540	299
Powerbook 140 CS/66 8/500	1989
Powerbook 1300 8/500 mono	1261
Powerbook 5300 CS/66 ps/ve	2255
Powerbook 5300 CS/66 16/750	3499
Powerbook 5300CE/117 32/1GB	3249

SCANNERS

UMAX Transp. Adipr S6/S8	\$275
UMAX Vista S8 w/Adobe LE	689
UMAX UC 680 LE	399

ACCESSORIES

Apple Quicktake 150 dgtl camera	695
Apple CD 300E-r	149
Adobe Photoshop Bundle full	467
Apple Vision 1705 Monitor	645
Apple Vision 1710 Monitor	889
Apple Vision 1710AV Mon	939

STORAGE

1080MB	\$290
2.2GB	659
4.2GB	999
External Kit	99
Syquest EZ-Drive 135 MB	225
Syquest 200MB-external	399
Syquest 270MB-external	451
Imagex ZIP Drive	189
1.3GB Optical Drive (Ext)	1299
2.4GB Optical Drive (Ext)	2199
Firewireable CD-ROM	1150

Prices reflect cash discount.

Prices subject to change.

1-800-325-4711 (4622)
International Orders (305) 625-9574

Computer Pros



JAZ/CD-R DUO



ONLY \$1499

Now you can have it all! A blazing 1GB workspace for digital video/audio, another removable volume for huge graphics, another rewritable disc for work-in-progress game or d-base development. Then seamlessly transfer to data or audio CD - low cost CD's that can be distributed universally or saved as lifetime enduring archive. Call it the ultimate ensemble of speed, versatility and removability or just call it **EXTREME!**

CD-R BLANKS

\$6.99

74 Minute 4X & 6X Cert.

OPTICAL BLOWOUT

128MB...\$12.99
230MB...\$17.99
650MB Optical...\$39.99
1.3GB Optical...\$49.99

SYQUEST CARTRIDGES

44MB...\$33 • 88MB...\$37 • 200MB...\$70
105MB...\$35 • 270MB...\$56

JAZ/ZIP CARTRIDGES

JAZ 1GB \$115 • ZIP 100MB \$16.99

CD-ROM CHANGERS

JVC 7 Disc Changer 4X Speed \$329
6 CD - 500 CD CHANGERS AVAILABLE

JVC RomMaker Multi-Drives & Microtek CD Duplicator Available - Call for Pricing

RECORD CDS

Color Scribe CD Printer \$2995

NEAT-O Labeling Kit \$79 includes 100 die cut labels and software

TDK CD-R Pens \$4.95

OPTICAL JAZ

2.6 GB Fast & Reliable Reads/Writes 1.3 & 650 Disks 60% Faster than 1.3GB Only \$1699

2.6 GB CARTRIDGES NOW ONLY \$69

1GB Removable HD • 3.5" Removable Hard Disk Technology • 6.7 MB per sec. Ideal for Video \$599 Includes 1 Cartridge

Now you can afford one too!

YAMAHA 4X MULTIMEDIA BUNDLE

\$1299

SONY Award Winning 2X

\$799

Now with NEW: **TOAST PRO 3.0** Writes On-the-Fly Optimizes On-the-Fly Incremental Backups

MEDIASTORE

See us at <http://www.mediastore.com>

800-555-5551

NEVER UNDERSOLD!

ph. 714-974-5551 • fx. 714-279-1690

CIRCLE 471 ON READER SERVICE CARD

LOWEST PRICES BEST SERVICE

POWER MACS POWERBOOKS
PERFORMAS MASS STORAGE
QUADRAS, MONITORS, PRINTERS

CALL FOR QUOTES

800-799-4622

310-358-9000
FAX 310-358-9100
<http://www.compu-age.com>

Dealers & International Orders Welcome
Same Day Shipping in USA
Call for any custom made configuration

"Best Computer Source"
-Computer Magazine

LEASING AVAILABLE

COMPU AGE

303 S. Robertson Blvd., Beverley Hills, CA 90211
Only Mail Order in Beverly Hills
SPECIAL CORPORATE DISCOUNTS

CIRCLE 542 ON READER SERVICE CARD

MacOutlet

PowerMacs		
7200/90	16/500/4x Cd	\$1279.00
7200/120	8/1200/4x Cd	\$1689.00
7200/120	16/1200/4x Cd	\$1899.00
7600/120	16/1200/4x Cd	\$2579.00
8500/120	16/1000/4x Cd	\$2999.00
8500/132	16/1200/4x Cd	\$3399.00
8500/150	16/1200/4x Cd	\$4099.00
9500/150	16/2000/4x Cd	\$4299.00

Monitors	
Apple 14" Multiscan	\$279.00
Apple 15" Multiscan	\$379.00
Apple 1705 Multil	\$629.00
Apple 1710av Multil	\$939.00
Apple 20" Multiscan	\$1749.00

Disks	
80Mb \$59.00	32Mb \$359.00
160Mb \$179.00	64Mb \$749.00

See our Website for current pricing
<http://www.wds.com/ls/macoutlet>

We Accept Visa & MasterCard
LOW Loan Rates
Prices Subject to change
Prices reflect a cash discount

1-352-323-0871

FX 1-352-323-0874
2204 N Citrus Blvd
Leesburg, FL 34748

CIRCLE 433 ON READER SERVICE CARD

MacBYTE

JULY SPECIAL: 4MB 72 PIN
SIMMS - ONLY \$39.00!!!

BUY • SELL • TRADE
NEW & USED CPU's
TECH SUPPORT:
310.448.4488
FAX 310.448.4494

800-432-2983

Open Monday - Friday
4215 Glencoe Ave., #150
Marina del Rey, CA 90292

CIRCLE 428 ON READER SERVICE CARD

MAC SUPER DISCOUNT CENTER

•Buy•Sell•Trade•New•Used•Refurbish•

Performa 5200/5125... \$1099/1149
Performa 636cd/6115cd... \$979/1089
PB's 150/520/Others... \$749/899/CALL
Performa 460/475... \$499/599
Quadra 650/950... \$999/1249
LW 300/320 w/Toner... \$329/529
Monitors 12"/14"/15"... \$199/239/299
PowerMac 8500... Lowest
All Other Macintosh Models.. CALL
Specializing in Educational Orders

MP-Computer Micro Systems
800-445-6767 Orders Only
415.988.0661 Info & International
415.968.0509 Fax

Epson 1200C Mac Pro Version

- 30-bit scanning at 4800 dpi, single and triple pass scanning
- Comes with Full Version Photoshop and Kai's Power Tools
- Mac World's Editor's Choice award for best mid-range scanner



\$1090.00



UMAX Vista S8 Mac Pro 2

- 24-bit scanning at 300 dpi, single pass scanning
- Comes with Full Version Photoshop 3.0 and KPT Power Photo CD and KPT SE
- July '96 MacWorld Review, #1 rated low cost scanner!



\$595.00



Phone: 310-533-0496 Fax: 310-533-0501

Micro Outlet 2785 Pacific Coast Highway #178 Torrance, CA • 90505

Business Hours: Monday-Friday 7:00 am to 7:00 pm pst Saturday 8:00 am to 2:00 pm pst

Visit us on the World Wide Web at: HTTP://WWW.microoutlet.com

Email: Microoutlet@aol.com

Syquest 270MB or 200MB

\$299.00



270MB or 200MB Cartridges

\$55.00

1GB External Hard Drive

Includes cable, terminator, and FWW formatting software.

\$299.00



LEASING SPECIALISTS

FAST APPROVAL

LOWEST RATES • NO ADVANCE PAYMENT

100% TAX DEDUCTIBLE

POWERMACS

9500/150	16/2GB/CD	\$ 4325
8500/150	16/2GB/CD	4250
8500/132	16/2GB/CD	3495
8500/120	16/1GB/CD	2925
8500/120	48/1GB/CD	3323
8500/120	16/2GB/CD	3525
8500/120	48/2GB/CD	3920
7600/120	16/1.2GB/CD	2699
7500/100	16/500/CD	2175
7500/100	16/1GB/CD	2275
7500/100	16/1GB/CD-Refurb.	1975
7200/120	16/1.2/CD	2150
7200/120	8/1.2/CD	1775
7200/120	8/1.2/CD/DOS	CALL
7200/90	8/500/CD	1195
7200/90	16/500/CD	1349

POWERBOOKS

190	8/500	\$ CALL
190CS	8/500	1449
5300	8/500	1199
5300CS	8/500	1850
5300CS	16/750	2395
5300C	8/500	2395
5300C	16/750	2895
5300CE	32/1GB	3875
DUO2300C	8/750	2785
DUO2300C	20/1GB/MOD	3775
DUO280C	4/230	999
520	8/240	1066
520C	4/240	1275

PERFORMAS

Performa 630	8/350/CD	\$ 899
Performa 5215	8/1GB/CD	1475
Performa 6200	8/1GB/CD	1545
Performa 6205	8/1GB/CD	1750
Performa 6290	8/1.2GB/CD	CALL
Performa 6300	16/1.2GB/CD	2150
Performa 6320		CALL

MONITORS

Apple Multiscan 15"	\$ 399
Apple Multiscan 1705	599
Apple Multiscan 1710	CALL
Apple Multiscan 1710AV	979
Apple Multiscan 20"	1899
Hitachi Superscan MC 17"	875
Hitachi Superscan MC 20"	1345
Hitachi Superscan MC 21"	1899
Hitachi Superscan MC 21" HR	1975
NEC XV15+ 15"	475
NEC XV17+ 17"	805
NEC XE21 21"	1685
NEC XP21 21"	1960
Radius Precisionview 17"	927
Radius Precisionview 21"	2299
Radius Pressview 21" HR	3149
Sony CPD15SX1 15"	429
Sony CPD15SF2 15"	469
Sony CPD17SF2 17"	859
Viewsonic 17EA (AV) 17"	650
Viewsonic 17GA (AV) 17"	685

HARD DRIVES

INTERNAL:

Quantum 850MB Trailblz 3.5"	\$ 179
Quantum 1GB Fireball 3.5"	250
Quantum 1.2GB Fireball 3.5"	295
Seagate 2GB Barracuda 3.5"	660
Quantum 2.1GB Atlas LP 3.5"	680
Quantum 4.3GB GrandPrix 3.5"	750
Seagate 4GB Barracuda 3.5"	1188

EXTERNAL:

Quantum 850MB Trailblz 3.5"	\$ 235
Quantum 1GB Fireball 3.5"	299
Quantum 1.2GB Fireball 3.5"	349
Seagate 2GB Barracuda 3.5"	715
Quantum 2.1GB Atlas LP 3.5"	735
Quantum 4.3GB GrandPrix 3.5"	850
Seagate 4GB Barracuda 3.5"	1258
Syquest EZ-135 Drive	215
Imega Zip Drive	189

SCANNERS

AGFA StudioScan IIsi	\$ 675
Epson 1200C LE	925
HP Scanjet 4C	915
Microtek Scanmaker E3	359
Microtek Scanmaker 35t	675
Nikon Super Cool Scanner	1895
Nikon ScanTouch AX1200	1170
Umax VistaS6E SOHO Mac	395
Umax VistaS6E Mac Pro2	595
Umax VistaS12 LE Scanner	720
Umax Powerlook II	2265
Umax Page Office	299
Visoneer Paperport VX	299
Visoneer Paperport	269

MODEMS

Apple GeoPort Telecom Kit	\$ 118
Global Village Teleport Platinum 28.8	189
Global Village PowerPort PC Card	325
Global Village Platinum Pro PC Card	469
Megahertz CruzCard 28.8	289
Megahertz CruzCard14.4	75
Supra ExpressModem288	155
Supra FaxModem288	199
U.S. Robotics Mac & Fax Sportster	199

CD ROMS

Apple 600E Quad Speed	\$ 269
Phillips CDD-200 CDR Ext.	1069
Seven Bay CD Rom Tower	1339
Pinnacle RCD1000	999
(2x Recordable/includes TOAST and 2CDs)	

MISC.

Atto Fast&Wide SCSI/PCI	\$ CALL
Connectix QuickCam	95
Connectix Color QuickCam	230
FWW Fast&Wide SCSI/PCI	350
Internet Phone	199
Radius Videovision Studio (PCI)	3465
Syquest 135 Meg Cartridges	CALL
TrueVision TARGA 2000 (PCI)	3699
UMAX BizCard Reader	199
Wacom ARTZII 6x8	299

PRINTERS

Apple StyleWriter 1200	\$ 169
Apple StyleWriter 1500	279
Apple Color StyleWtr 2200	279
Apple Color StyleWtr 2400	289
Apple StyleWriter 2500	389
Apple LW 4/600PS	CALL
Apple LW Select 360	CALL
Apple LW 12/600PS/Color	5699
Epson Stylus Color II	285
Epson Stylus Pro	475
Epson Stylus Pro XL (11X17)	1749
Epson S Pro XL SW/PS Card	249
GCC Elite XL 608	2275
GCC Elite XL 808	2865
GCC Elite XL 1280 24MB	4139
GCC Elite XL 1280 SUPER	5669
HP DeskWriter 660C	352
HP DeskJet 855C	495
HP LaserJet 5MP	999
HP LaserJet 4MPlus	1469
HP LaserJet 4MV (11x17)	2765
Tex In. Microlaser 600	825

SOFTWARE

Adobe Illustrator 6.0	\$ 399
Adobe Pagemaker 6.0	469
Adobe Photoshop 3.0.5	539
Adobe Premier 4.2	487
Electric Image	SPECIAL CALL
Form Z 2.7	SPECIAL CALL
SoftWindows 2.0 PwrMac	279
Quark Xpress 3.3 Pwr Mac/68kMac639/585	

DIGITAL CAMERAS

Apple Quicktake 150	\$ 645
Chinon ESC-3000	699
Kodak DC-50	949
Kodak DC-40	699

MEMORY SALE!

SIMMS/DIMMS/POWERBOOK

4MB	Simms 72 Pin	\$ 37
8MB	Simms 72 Pin	89
16MB	Simms 72 Pin	180
32MB	Simms 72 Pin	349
8MB	Dimms	99
16MB	Dimms	189
32MB	Dimms	369
64MB	Dimms	799
8MB	Powerbook 5300/190	175
16MB	Powerbook 5300/190	330
32MB	Powerbook 5300/190	675
48MB	Powerbook 5300/190	1045
1MB	VRAM	50
256K	L2 CACHE	99
512K	L2 CACHE	119

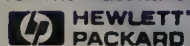
36 MONTH LEASE RATES (FMV)

\$3000	\$5000	\$7000	\$10000	\$12000	\$15000
\$109	\$165	\$231	\$314	\$377	\$471

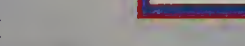
GE 3 YEAR EXTENDED WARRANTY

\$351 to \$700	\$701 to \$1200	\$1201 to \$2000	\$2001 to \$3000	\$3001 to \$4000	\$4001 to \$5000
\$79.95	\$139.95	\$169.95	\$199.95	\$229.95	\$259.95

Due to publication time, the advertising prices may vary. All prices includes cash discounts. Not responsible for typographical errors. Shipping and service fees are non-refundable. No sales tax outside of CA. All returns subject to 15% restocking charge. All returns must have an authorization number (R.M.A.)



radius



CIRCLE 472 ON READER SERVICE CARD



Your Digital Video Electronic Publishing Specialists

800-429-7779
Fax 714-375-6397 17131 Beach Boulevard
Huntington Beach CA 92647

PowerMac

9500 150MHz 80/8G Array/CD \$7675
9500 150MHz 80/4G Array/CD \$6575
9500 132MHz 80/2G Array/CD \$4995
8500 132MHz 80/4G Array/CD \$5400
8500 120MHz 48/2G Array/CD \$3950
PowerComputing \$Call

BLAZING EFFECTS!

Adobe After Effects Production ... \$1,695
Borris Effects v2.0 \$595
Final Effects \$595

Media 100qx

MEDIA 100 QX 7500/100/32MB/1G
AUTHORIZED RESELLER
Adobe Premier 4.2, After Effects 3.0 Apple 17" Monitor, Keyboard, FWB 4100 w/Jock Hommer, 13" NTSC Monitor

Adobe After Effects

PowerMac 8500/120/32MB/2G/CD
Adobe Premier 4.2, Adobe After Effects 3.0 Apple 17" Monitor, Keyboard, Borris Effects
\$5,795

Software

Adobe Photoshop v3.0.5 \$395
Adobe Page Maker v6.0 \$495
Adobe Premiere v4.2 \$425
Adobe Illustrator v6.0 \$295
Stroto Studio Pro Blitz \$750
Electric Imago \$Call
Authorware Pro 3.0 \$3,795
Director Multimedia Studio ... \$1,295
Director 4.04 \$750
Fractal Design Pointerv4.0t ... \$325
Infini-D \$455

Pre Press System

Complete Color Pre Press System

Lease/Purchase \$575 per month; Includes Power Mac 7500 24/16, 17" Color Monitor, Software, Ex Keybd., AGFA Color Scanner, Color Proof Printer, Imagesetter w/Rip & Processor
\$575

Targa Workstation

PM 9500/120/48MB/1GB/CD/ATI
Torgo 2000 PCI, Adobe Premier 4.2, 2X Apple 17" Color Monitor, Ext. Keyboard, 4.2GB Disk Array Wide PCI, Adobe After Effects v3.0 Production, Borris Effects, Reflects Cash
\$13,495

The Cartoon Machine

PM 9500/132/80MB/2GB/4XCD

Animation Stand, Infini-D, Premiere, Borris FX, Alto PCI SCSI, Apple 17" Color Mon., Apple Ext. Keybd, Torgo 2000-Pro, 9 gb Seagate HD, Matrox Mil. 3d Video, Use what Works
\$21,725
Disney, Warner Bros, MGM, and Nickelodeon uses.

Production 400MHZ

Dec Alpha 400 MHZ, 2Mb Coche, Windows NT, KeyBoard, Mouse, (2) 2 GHD, (4) 4G External 64M Rom, 4x CD 17" Nono Monitor, Yomoho Audio Monitor, 45watts w/subwoofer, Picture Publisher Photo Engine, Sound Forge Sound Editing, LightWave 3D Animation, Perception Board, Rozor
\$Call

CIRCLE 405 ON READER SERVICE CARD

TRADE YOUR MAC FOR A NEW ONE. We Pay Top \$\$\$ For Your Mac & Mem.

We custom configure and test your system. Specializes in Pre-Press, Publishing, Digital Video products. WE BUY • SELL • TRADE Competitive Leasing Rates are Available FREE MOUSE PAD WITH EVERY ORDER

PowerMacs

9550 150 MHZ \$CALL
9500 132/80-1GB 4190
9500 120/16-1GB 2850
8500 80-2GB 3890
8500 16-1GB-CD Call
8500 132MHz 48-4GB CALL
7500/8500 0-0-0 1495/2545
Call For 132 & 150 Mhz

7600 16-2GB-CD 2690
7200 90/16-500 1180
Call for config. not listed

Powerbooks

5300CE 32-1Gb \$3790
5300c 16-1GB 3399
5300cs 8-500 1790
5300cs 16/1GB 2650
5300 8-500 1189
5300C 16/750 \$2790

Demo Powerbooks

Duo 230 / 250 650/990
540C / 540 1990/CALL
180 8-160/170 8-160 890
520c 4-240 \$1065

Upgrades

Same day Upgrade No down Time!!
Pref 630 to 6200 375
7200 75 to 120 Mhz 490
7200 90 to 120 Mhz 425
8100 to 8500/132MHz 1690
8100 to 8500/120MHz 1399
120 MHZ to 150 MHZ CALL
7100/ 80 to 7500/ 100 999
Q/Cts 610-660 to 6100 395
P8 500 to 5300 565
All PowerBook Upgrade CALL
Call for Upgrades not listed

Parts

L.8.Q800/ Q840 450/590
AV Card \$299
8d 132 150 Mhz 1150/1790
Floppy 1.44 90
Call for Power Supplies & more

Demo Macs

Q 800/ 840/950 750/ 850
Preforma 6300 1720
6100/7100 795/985
FX / Si / Ci 290/190/250
9500 120MHz/16-1GB 2980
8500 132/120 3250/2890

<< Lease >>

8500 /120 16-1GB-CD \$85
8500 /132 64-4GB-CD 137
7500 /100 32-1GB-CD \$60
9500 /132 80-1gb-CD 120
5300C 16-750 \$84
7200 /90 16-500-CD 39
Up to \$75,000 Credit
Call us with your list of Equip !!
Same Day & Affordable Leasing.

Performa

Call for latest prices.
6300/6220/6115/640/5215

Memory

30 Pin 1/ 4/16 15/60/150
72 Pin 8/16/32 85/149/289
Dimms 8/16/32 90/165/299
2X - 4X CD 50/ 210
3.5" 1000MB. \$225
700 M8 - 2GB 125 / 399

Computer Graphics & Networking

<< Prices are subject to Change.>>

TEL: 310-441-4771 10922 Pico Blvd. Los Angeles, CA 90064 Fax: 310-441-4770

CIRCLE 432 ON READER SERVICE CARD

Stop Mousing Around!

Only **\$99.95** Keyboard & Trackball



Now type, point and click without ever moving your hands from the keyboard!

Trackboard gives you both a full-function, extended keyboard and a full-size, easy-to-use, 3-button trackball in one single space-saving package. Best of all, it's lifetime warranty will enhance your peace-of-mind. **Trackboard, the best data entry tool since the pencil!**

1-800-755-7185

Datadesk's Web Site
<http://www.datadesk1.com/datadesk>



CIRCLE 421 ON READER SERVICE CARD

CALL US FOR ALL OF YOUR Computer needs!

COMPUTER REVELATIONS

Selling Reliability, Quality and Affordability with every system for over 10 years!

COMPAQ HP HEWLETT PACKARD Tektronix FUJITSU Microsoft radius and more!

Over 20,000 products Available!
PowerMacs
Printers, Monitors,
Scanners,
all peripherals,
Hardware & Software!

Call For Latest Pricing!

See us for your Digital Video needs
Targa 2000, Media 100, Video Vision
miroMOTION and more!



1 800 275-9924 in NY 516 737-0800
331E DANTE COURT HOLBROOK NY 11741 FAX 516 737-0923
NEW & USED BOUGHT & SOLD Ask about our EXTENDED WARRANTY

ALL APPLE PARTS & ACCESSORIES IN STOCK Rentals / Service available in NYC area

CIRCLE 474 ON READER SERVICE CARD

POWER BOOK 150

4/250 \$569

8/250 \$669



- 68030/33
- LCD DISPLAY!
- 5.5 LBS
- LOCAL TALK
- 1 YR WARR.

COMPU AMERICA

"The Computer Specialist"

5300CE 117MHZ!

32/1.2GIG ACTIVE \$3795



- 117MHz
- 603e CPU
- 2 PCMCIA
- 800X600 RES
- 2MB VRAM
- TRACKPAD

DUO 280C 66MHZ!

4/320/ACTIVE \$1095

12/320/19.2 \$1499



- 68040/66
- DOCKABLE!
- 4.5 LBS
- ACTIVE
- 1 YR WARR.

1800-533-9005

EMAIL: CompuAmer@aol.com

(310) 446-1771 10435 Santa

FAX Bids Monica Blvd

(310) 475-7744 LA, CA 90025

We are open on Saturday!

Come and see our HUGE showroom! We ship WORLDWIDE!

We accept Government, Fortune 1000, and University P.O.'s.

PERFORMA 6290

8/1GIG/4XCD \$1749



- 100MHz CPU
- 603E RISC
- 28.8 MDM
- Keyboard
- 14" Display
- Software Bundle

POWERMAG

7200/75	8/500/CD	1049/949*
7200/90	8/500/CD	1249/1099*
7200/90	16/500/CD	1349/1199*
7200/120	8/1.2GIG/CD	1699
7200/120	16/1.2GIG/CD/CACH	1899
7200/120	16/1.2GIG/CD/DOS	2449
7500/100	16/500/CD	2199/1799*
7500/100	16/1GIG/CD	2389/1899*
7600/120	16/1.2GIG/CD	2579
8500/120	16/1GIG/CD	2999/2699*
8500/120	16/2GIG/CD	3199/2899*
8500/132	16/1.2GIG/CD	3399
8500/150	16/2GIG/CD	4199
9500/120	16/1GIG/CD	2999/2799*
9500/132	16/1GIG/CD	3599/3399*
9500/132	16/2GIG/CD	3699/3399*
9500/150	16/2GIG/CD	4299
6100/66	8/500/CD	895
6100/66	16/500/CD/DOS	1099
7100/80	8/500	CALL
7100/80	8/700/CD	CALL
7100/80AV	16/700/CD	CALL
8100/100	8/700	CALL
8100/100	16/1GIG/CD	CALL
8100/100AV	16/1GIG/CD	CALL
8100/110	16/2GIG/CD	2795*
QUADRA 950	8/0	1399

WORKGRP SERVER

7250/120	16/1.2/CD	2599
7250/120	16/1.2/CD/APLSHR	3299
8150/110	16/1GIG/CD/DAT/A	3995
8550/132	24/2G/CD/APLSHR	5795
8550/132	24/2G/CD/DAT	5995
8550/132	24/2G/CD/DAT/SHR	6895

PERFORMAS

Performa's Include Monitor
Keyboard, Except 6220.

6300CD	16/1.2GIG/CD	2049
6320CD	16/1.2GIG/CD	2399
6290CD	16/1GIG/CD	1749
6220CD NODISP	16/1GIG/CD	1549/1049*
6205CD	8/1GIG/CD	1649/1095*
6200CD	8/1GIG/CD	1499/1049*
6116CD	8/700/CD	1179/899*
6115CD	8/350/CD	849*
5215CD	8/1GIG/CD	1449/1099*
640CD DOS	12/500/CD	1399/949*
638CDV	8/250/CD/TV	899*
635CD	5/250/CD	699*
631	8/500	799*

POWERBOOKS

5300CE/117	32/1GIG	3799
5300C/100	16/750	2799
5300C/100	8/500	2299
5300CS/100	16/750	2299
5300CS/100	8/500	1849
5300/100	8/500	1199
190CS/66	8/500	1399
190/66	MONO 8/500	999
520	4/240	749/699*
520C Ref.	4/160 & 240	1049/1099
520C Ref.	12/320/FAX	1699
540C	4/320	1899*
540C	12/500/FAX	2599*

DUO'S AND DOCKS

DUO 2300C	20/1.2GB/14.4	3595
DUO 2300C	8/750	2695
DUO 280	4/240 NO MAN	799/699*
DUO 280	12/240/FAX	1399/1199*
DUO 280C	4/320	1099/999*
DUO 280C	12/320/FAX	1499/1399*
150	4/250	569
150	8/250	669
DUO DOCK		499/399*

Apple Printers

StyleWriter 1200 / 2400	199/299
StyleWriter 1500/2500	249/369
StyleWriter 2200	299
Apple Personal Laser 300	349*
Apple LaserWriter Select 360	1149
Apple LaserWriter 4/600PS	799
Apple LaserWriter 12/600PSC	5899
Apple LaserWriter 16/600PS	2099

Hewlett Packard

5MP	PS 600dpi Laser	969
4MV	11x17 Laser	2799
4M Plus	PS 600dpi Laser	1599
DeskJet 1600CM		1899
DeskWriter 850C / 660C		479/389
SCANJET 4C		929

ACCESSORIES

IOmega JAZZ & ZIP	579/189
APPLE EXTERNAL 600E	269

All prices are subject to change without notice. All prices are cash discounted. An Asterisk reflect refurbished.

APPLE MONITORS

Apple MS 14"/15"/1705	299/399/699
Apple MS 14"/15"	229*/329*
Apple 1710AV / 1710	999/899
Apple Multiscan 20"	1799/1199*

SONY MONITORS

Sony 15SF2 / 17SF2	489/879
Sony 17SE2 / 20SFII	879/1749

NEC MONITORS

NEC 15XV+ / 17XV+	489/799
NEC 17XE / 17XP	999/1049
NEC 21XE / 21XP	1699/1999

PORTRAIT LABS

PORTRAIT DISPLAY 1700 .26	1049
PORTRAIT DISPLAY 1700 .28	999

RADIUS

PRESSVIEW 21SR 21"	2999
PRECISION VIEW 17"	949
PRECISION VIEW 21"	2195
SUPERMATCH 21TXL 21"	1499*
RADIUS 15" COLOR PIVOT	399*
THUNDER COLOR 30/1600	1599
THUNDER COLOR 30/1152	1249
THUNDER 30/1600	1099
THUNDER 30/1152	699
THUNDER 8/1600	399

UMAX

VISTA S6 MAC PRO II	659
VISTA S8 MAC PRO II	759
VISTA S12 MAC PRO II	849

GLOBAL VILLAGE

TELEPORT PLATINUM 28.8	199
TELEPORT GOLD 14.4	99
POWERPORT PLAT PCMCIA 28.8	319
POWERPORT PLAT PRO 28.8/ETHER	479

EPSON

1200C PRO (FULL PHOTOSHOP, KPT)	995
STYLUS PRO (720DPI COLOR INKJET)	499
STYLUS COLOR (720DPI COLOR INK)	329



LA's LEADING COMPUTER STORE!

LA COMPUTER CENTER

(800) 689-3933

ORDERS ONLY!

(310) 473-2535 FAX (310) 312-9041

E-mail us at:
lacc@directnet.com

POWERBOOKS

PowerBook 150
8/250 \$679



4/250 \$569

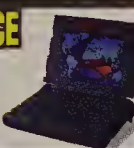
PowerBook 5300
8/500
\$1149



PowerBook 5300C
16/750
\$2799



PowerBook 5300CE
32/1GIG
\$3799



5300CS	8/500	\$1849
5300CS	16/500	\$2049
5300CS	16/750	\$2299
5300C	8/500	\$2299
190	4/500	\$999
190CS	8/500	\$1399
180C	4/160/mod	\$1899*
540C	4/320	\$1999*
540C	12/320/mod	\$2599*
520	4/240	\$749
520C	4/240	\$1099*
520C	4/240/mod	\$1299*
520C	12/320/mod	\$1699*
Duo2300C	8/750	\$2699
Duo2300C	20/1.1G	\$3599
Duo250	4/200	\$699*
Duo250	12/200/Mod	\$1199*
Duo280	12/240/Mod	\$1299*
Duo280C	4/320	\$1099
Duo280C	4/320	\$999*
Duo280C	12/320/M	\$1499

MONITORS

SONY	
1425 14"	\$349
15SX1/15SF11 15"	\$429/519
17SF11 17"	\$859
GDM 17SE11	\$1049
20SF11 20"	\$1649

RADIUS	
SuperMatch 17"	\$599*
SuperMatch 20"	\$799*
SuperMatch 21TXL 21"	\$1499*

APPLE	
20" MultiScan	\$1199*
14" AV MultiScan	\$279
14"/15" MS	\$199*/249*
17" 1705	\$699
17" 1710/1710av	\$899/999
20" MultiScan	\$1799

WE ALSO CARRY

TOSHIBA IBM COMPAQ

INTERNATIONAL ORDERS WELCOME!
Call for Quantity Pricing!

WE WANT TO BUY YOUR NEW & USED APPLE PRODUCTS
UNIVERSITY, SCHOOLS, GOV'T & FORTUNE 1000 P.O.'S ACCEPTED!
BUSINESS LEASING AVAILABLE CALL FOR DETAILS

GE 4 YEAR ON SITE WARRANTY!					
ASK YOUR SALES REP REGARDING GE EXTENDED ON SITE WARRANTY					
\$100 to \$350	\$351 to \$500	\$501 to \$750	\$751 to \$1000	\$1001 to \$1500	\$1501 to \$2000
\$49.95	\$79.95	\$139.95	\$169.95	\$199.95	\$259.95

* Reflects Refurbished Units. Prices Subject To Change Without Notice.
CALL FOR LATEST PRICE. ALL PRICES REFLECT A 3% CASH DISCOUNT
Credit Cards Will Be Verified For Fraudulent Use.



NEXT DAY AND SAME DAY SHIPPING
AVAILABLE. WE SHIP WORLDWIDE!
OPEN SATURDAY. VISIT OUR SHOWROOM!
12002 PICO BLVD. WEST LOS ANGELES, CA 90064

Visit Us At Our NEW Web Site
www.LAComputerCenter.com
24Hrs A Day -- On-Line Ordering

POWERMACS

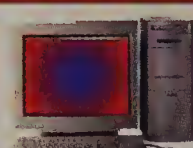


8500 120MHZ!

16/1GB/CD

\$2699*

MONITOR AND KEYBOARD
SOLD SEPARATELY.



9500 132MHZ!

16/1GB/CD
w/Video Card

\$3399*

MONITOR AND KEYBOARD
SOLD SEPARATELY.

NEW \$2999 NEW \$3599

NEW MODELS

7200 120MHZ!	8/1.2GB/CD	\$1699
7200 120MHZ!	16/1.2GB/CD	\$1899
7600 120MHZ!	16/1.2GB/CD	\$2599
8500 132MHZ!	16/1.2GB/CD	\$3399
8500 150MHZ!	16/1.2GB/CD	\$4199
9500 150MHZ!	16/2GB/CD	\$4299

6100DOS CARD \$199 IOMEGA ZIP DRIVE \$179

6100/66	8/500/CD	\$899	7500/100	16/500/CD	\$2199
6100/66/DOS	16/500/CD	\$1099	7500/100	16/500/CD	\$1799*
7100/80	8/700/CD	\$CALL	7500/100	16/1GB/CD	\$2399
7100/80AV	16/700/CD	\$CALL	7500/100	16/1GB/CD	\$1899*
8100/100	8/700	\$CALL	8500/120	16/2GB/CD	\$3199
8100/100AV	16/1GB/CD	\$CALL	9500/120	16/1GB/CD	\$2999
8100/110	16/2GB/CD	\$CALL	9500/120	16/1GB/CD	\$2799*
7200/75	8/500/CD	\$1049	9500/132	16/1GB/CD	\$3599
7200/75	8/500/CD	\$949*	9500/132	16/2GB/CD	\$3799
7200/90	8/500/CD	\$1249		QUADRAS	
7200/90	8/500/CD	\$1099*	610	8/230/CD	\$899*
7200/90	16/500/CD	\$1349	630	4/250	\$749*
7200/90	16/500/CD	\$1199*	950	8/0	\$1399

PERFORMAS

6200CD

8/1GB/CD

\$1499



CPU, KEYBOARD, MOUSE, 14.4KBPS & 15" MULTISCAN MONITOR
COMPLETE WITH SOFTWARE

6200CD 8/1GIG/CD \$869*

CPU, KEYBOARD, MOUSE, 14.4KBPS ONLY NO MONITOR

631CD

8/500/CD

\$799*

6116CD

8/700/CD

\$899*



CPU & KEYBOARD &
14" MONITOR

CPU & KEYBOARD &
14" MONITOR

640CD	12/500/CD/NO MON	\$799*	6220CD	16/1GB/CD	\$1049*
6116CD	8/700/CD/14"	\$1199	6220CD	16/1GB/CD	\$1549
5215CD	8/1GB/CD	\$1449	6230CD	16/1GB/CD/Mpg	\$2099
6205CD	8/1GB/CD/NO MON	\$899*	6290CD	16/1GB/CD/14"	\$1749
6205CD	8/1GB/CD/15"	\$1599	6300CD	16/1GB/CD/15"	\$2049

PRINTERS

LaserWriter 4/600	\$749
LaserWriter Personal	\$329*
LaserWriter Select 360	\$1149
LaserWriter 16/600/PS	\$2099
Color LaserWriter 12/600	\$5699
Portable Stylewriter	\$239*
StyleWriter 2200	\$299
StyleWriter 1200/2400	\$199/299
STAR COLOR PRINTER	\$99

STYLEWRITER

1500 \$249
2500 \$369

HP DeskWriter 660C	\$379
HP DeskJet 850C	\$489
HP LaserJet 5MP	\$949
HP LaserJet 4MPlus	\$1499
HP LaserJet 4MV	\$2699

CIRCLE 497 ON READER SERVICE CARD

DISCOUNT WAREHOUSE

Configure your own System
Package or Choose a Bundle

BUY, LEASE OR RENT

Call for New Products &
Daily Specials

PowerMac 8500 SuperSystem



ONLY
\$250
per month*

- Power Mac 8500 32MB RAM/1 GB HD/4xCD ROM/PCI Slots
- Sony 20" Trinitron Monitor • UMAX Vista S12 Pro Scanner
- HP SMP Laser Printer • Keyboard • PhotoShop, OCR, Kai's PT Bundle, Mouse & Cables

PowerBook 5300c MobileOffice



ONLY
\$122
per month

...Anywhere You Go!!

- PowerBook 5300c 16/750 Color Act Matrix • 28.8FaxModem
- Targus Deluxe Carrying Case • HP DeskWriter 340 Port. B/W & Color Printer • ABC PowerBundle: ClaristWorks, HP Portable Printer Battery, Cables, Surge Suppressor

MAC SYSTEMS

7600/120 Publishing System

- PowerMac 7600/120MHz PPC 604 32MB /1.2GB HD/CD • ViewSonic 17" MultiMedia Monitor • HP SMP 600dpi Laser • UMAX Vista S12 Pro Scanner w/PhotoShop, DCR, Kai's PT • Keyboard

\$188 p/m*

PowerBook 5300cs Exec System

- PB 5300cs 8/SDDColor, 28.8FaxModem
- Targus Deluxe Case • HP DeskWriter 340 Printer • ABC PowerBundle: ClaristWorks, HP Printer, Battery, Cables, Surge Supp.

\$2795/\$93 p/m*

MAC SYSTEMS

7200/120 HomeOffice System

- PowerMac 7200/120MHz PPC 604 16MB /500MB HD/CD • Apple 15" MultiMedia Monitor • Apple LaserWriter 4/6DD • Global Village 28.8FaxModem
- Keyboard • ClaristWorks & Quicken

\$3895/128 p/m*

7200/75 Budget System

- PowerMac 7200/75 8/500 HD/4xCD ROM • Apple 15" MultiRes MultiMedia Color Monitor • Ext. Keyboard

\$1499/\$59 p/m*

Call About Software,
Peripherals, PC Systems &
Extended On-Site Warranties

MACS & CLONES

- PowerMac 7200 8/500/CD\$995
- PowerMac 8500/150 16/2GB/CD...\$4195
- PowerMac 9500/150 16/2GB/CD...\$4440
- Performa 5215 8/1GB/CD.....\$1459
- PowerBook 5300cs 8/500.....\$1869
- PowerBook 5300cs 8/810.....\$2195
- PowerBook 5300c 16/750.....\$2885
- PowerBook DUO 2300c 8/750.....\$3195
- PowerBook 5300ce (117MHz) 32/1GB/28.8 FaxModem, Case.....\$3895/\$115 p/m*

MAC CLONES

- PowerComputing Power120 8/850....\$1695
- SuperMac 5900/150MHz 604 16/6xCD..\$3095
- DayStar Genesis Multi Processor MP600/528/300.....\$CALL

*price per month on lease plan. Call for details.

Torrance, California
USA

ADVANCE BUSINESS
CENTER

(310) 223-1370
fax: (310) 223-1380

1 (800) 499-4073

international
1 (310) 223-1373

CIRCLE 483 ON READER SERVICE CARD

A.M.S.

"The Professional Solutions"

1. 800. 847.4622

*** BUSINESS LEASING ***

TEL: (310) 314-7372

FAX: (310) 314-7512

Prices are subject to change without notice

Advanced MAC Systems

POWER MAC			POWERBOOK			MONITORS	
7200/90	16/500/CD	\$1465	2300c/100	8/750Mb	\$2755	Mitsubishi 21TX	\$1798
7200/120	16/1Gb/CD	\$1885	5300/100	8/500Mb	\$1255	NEC XP21 Display	\$2148
7500/100	16/1Gb/CD	\$2145	5300c/100	8/500Mb	\$2175	Precision View 17	\$ 888
7600/100	16/1Gb/CD	\$2795	5300c/100	16/750Mb	\$2675	Apple 15" MultiScan	\$ 298
8500/120	16/1Gb/CD	\$2955	5300cs/100	8/500Mb	\$1775	Sony 15Sf MultiScan	\$ 438
8500/132	16/2Gb/CD	\$3655	5300cs/100	16/750Mb	\$2175	Sony 17Sf MultiScan	\$ 868
8500/150	16/2Gb/CD	\$4375	5300ce/117	32/1.1Gb	\$3775	Apple 17" Multiscan	\$ 648
8500/150	48/2Gb/CD	\$4885	PRINTERS Color LW 12/600 PS \$5885 LW 16/600 W/Toner \$2045 LW Select 360 w/Toner \$1145 LW 4/600 PS w/Toner \$ 715 Color StyleWriter 2500 \$ 355 GCC Elite XL 808 11x17 \$2745 HP LaserJet 4MV 11x17 \$2695			Apple MultiScan 1710	\$ 888
9500/132	16/1Gb/CD	\$3555				ViewSonic 17PS 17"	\$ 888
9500/132	48/2Gb/CD	\$4425				ViewSonic PT770 17"	\$ 878
9500/150	16/2Gb/CD	\$4755				ViewSonic GT800 20"	\$1878
9500/150	48/2Gb/CD	\$5235				ViewSonic 21PS 21"	\$1658

Upgrade your PPC 8100
80,100,110MHz to PPC
8500,9500/150MHz

Graphic Card & Accelerator

Matrox MGA Millennium PCI 4MB	\$ 615
ATI Xclaim GA 4MB PCI	\$ 385
FWB JackHammer Accelerator	\$ 335
Radius Thunder Cir 30/1600 PCI	\$1695
Radius Thunder Cir 30/1152 PCI	\$1385
EASYCOLOR 1600/16	\$ 455
IMS TWIN TURBO 128M 4MB	\$ 545
TRUVISION TARGA 2000 PRO	\$4425
TRUVISION TARGA 2000 PCI	\$3325

Performa 6218CD 16/1Gb/CD \$1759

Universities & Government P.O.'s are
Welcome. Int'l orders (310)-314-7512

VISIT OUR WEB SITE AT "WWW.WWSWORLD.COM/AMS"

CIRCLE 470 ON READER SERVICE CARD

MACMAIL

CALL WITH THE LOWEST PRICE EVER CALL

MACS, ETC

- PMAC7200 75-8 500 CD\$995
- PMAC7200 90-8 500 CD\$1155
- PMAC7200 90-16 500 CD\$1240
- PMAC7500 100-16 500 CD ...\$2350
- PMAC7500 100-16 1G CD ...\$2395
- PMAC8500 120-16 1G CD ...\$3355
- PMAC8500 120-16 2G CD ...\$3850
- PMAC9500 120-16 1G CD ...\$2998
- PMAC9500 132-16 1G CD/M ...\$3675
- CUSTOM CONFIGURATIONS .CALL

PERFORMAS

- 630CD 8/500\$1050
- 5215CD 8/1G\$1430
- 6200CD 8/1G\$1790
- 6300CD 16 1.2GB\$2485
- **Prices include Apple Display, Keyboard, Modem & Software**
- APPLE V-TV CARD (Free Install) ..\$205
- APPLE CD 600e\$270

PRINTERS, ETC.

- STYLEWRITER 1200\$189
- NEW!!! APPLE SW 1500 ..\$265
- COLOR SW 2200\$259
- NEW!!! APPLE SW 2500 ..\$365
- LW 4/600 PS W/TNR\$759
- LW 16/600 W/TNR\$2099
- LW 12/600 W Kit\$6210
- GENERIC EXTENDED KB ..\$50
- APPLE EXTENDED KB\$143
- APPLE DESIGN KB\$80
- APPLE CD 600E W/SW ...\$299

MONITORS

- Apple MultiScan 14"\$285
- Apple MultiScan 15"\$339
- Apple 1705 Display\$679
- Apple Vision 1710\$895
- Apple 1710 AV Display\$999
- Apple 20" MultiScan ...\$1850
- Radius PressView 21" SR \$2940
- RasterOps Superscan 20 ..\$1380
- Thunder Color 30/1152 ..\$775
- Precision Color 8/1600 ..\$470

POWERBOOKS

- POWERPC 5300 CS 100 8 500 ..\$1925
- POWERPC 5300 CS 100 16 750 ..\$2595
- POWERPC 5300 C 100 8 500 ..\$2998
- POWERPC 5300 C 100 16 750 ..\$3375
- PB 190/66CS 4/500\$1185
- PB 190/66CS 8/500\$1325

DRIVES

STORAGE DEVICES

- SEAGATE 1 GIG EXT. HD ..\$339
- SEAGATE 2.1 GIG EXT. HD ..\$695
- SIQUEST 135MB E-Z DRIVE ..\$229
- IONEGA 100MB ZIP DRIVE EXT. \$198
- SIQUEST 200MB EXT.\$440
- SIQUEST 270MB EXT.\$432

UPGRADES

- SE HABLA ESPAÑOL
- Int'l Orders Welcome
- Leasing Plans
- FEDEX-UPS-Etc...
- Prices may change
- Price represent cash discounts

MACMAIL

Miami, Florida 1-800-622-6844
International call (305) 639-9646



800-MAC-6844

CIRCLE 523 ON READER SERVICE CARD

Business Owners Establish a MacLEASE™ Line-of-Credit. LOW LEASE RATES



You choose the vendors, you choose the equipment, you choose the terms.
We will establish a lease line-of-credit that you can use to finance your computer system with the vendor or vendors of your choice. Acquire the equipment from any of the suppliers listed in Macworld, any catalog reseller, or from your local dealer.

We can establish a lease line-of-credit up to \$100,000
for you with a simple application. MacLEASE™
does NOT require financial statements or tax returns*

No Membership Fees!

800-864-4751

Easy Credit Approval!

<http://www.maclease.com/>

Fax (603) 430-9777 Portsmouth, NH, For info by Fax call 800-864-4752

*A \$15,000 lease-line-of-credit available for start-up businesses

CIRCLE 416 ON READER SERVICE CARD



Since 1988
1941 Freeman #B
Signal Hills,
CA 90804

FAX (310)498-0032 Int'l (310) 498-1230
<http://www.macbase.com>

7500 & 7600



7500/100 • 100-MHz PowerPC 601 processor
• 7600/120 PowerPC 604 processor running at 120MHz.
Mon. & Kb sold separately

750016/500/CD	\$2129
750016/1GB/CD	\$2289
760016/1GB/CD	\$2759
760032/2GB/CD	\$3139

8500



• PowerPC 604 processor running at 120, 132 or 150 Mhz • 3 PCI expansion slots • Quadruple CD ROM • Dual SCSI connector.

Mon. & Kb sold separately

120/16/1GB/CD	\$2999
132/16/1GB/CD	\$3599
132/80/2GB/CD	\$4559
150/16/2GB/CD	\$4299
150/80/4GB/CD	\$5399

9500

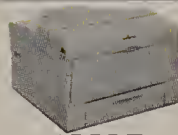


• PowerPC 604 processor running at 120, 132 or 150 Mhz • 6 PCI expansion slots • Quadruple CD ROM • 512 Level II Cache card

Mon. & Kb sold separately

120/16/1GB/CD	Call
132/16/1GB/CD	\$3699
132/16/2GB/CD	\$3699
150/16/2GB/CD	\$4499
150/80/4GB/CD	\$5599

PRINTER



APPLE

1200/2400	\$189/\$289
1500/2500	\$279/\$389
LW 4/600	\$799
LW 16/600	\$2059
LW 12/600	\$5899

HP

HP 855CXI	\$499
HP 1600CM	\$1829
HP 5MP	\$1029

**BUSINESS
LEASING
AVAILABLE**

PowerBook

190/66 cs 8/500	\$1449
5300/100 8/500 MONO	\$1199
5300/100 CS 8/500	\$1899
5300/100 CS 16/750	\$2389
5300/100 C 8/500	\$2339
5300/100 C 16/750	\$2929
5300/117 CE 32/1GB	\$3999
2300C/100 8/750	\$2759
2300C/100 20/1GB/MOD	\$3649



ACCESSORIES

Mhz Cruisecard 28.8	\$289
Global Village 28.8 pc	\$349
Global Village PRO 28.8	
& Ethernet modem	\$489
Farallon AirDock	\$79

PowerBook 540c

The PowerBook 540c is one of Apple's top of the line color PowerBook, Motorola 68LC040, processor running at 66/33, active matrix color display • Upgradable to PowerPC processor • Built in ethernet and video out port supporting most Apple monitor display. 4 Mb of RAM expandable to 36 MB • Optional 19.2bps Global Village fax modem • Weight : 7.3lbs

1-year factory warranty

NEW!



4/320 \$1899

12/320/Modem \$2349

Prices reflect cash discounts and subject to change without notice. P.O.s are subject to credit approval

PERIPHERALS

IOMEGA	
ZIP DRIVE W/CART.	\$195
JAZ DRIVE W/CART.	\$589
JAZ CARTRIDGE 1GB	\$97

EZ QUEST

JAZ 1GB W/CART	\$499
----------------	-------

QUANTUM

FIREBALL 1280MB	\$259
CAPELLA 2200MB	\$619
ATLAS 2100MB	\$729

SEAGATE	
Barracuda 2LP 2.1GB	\$759
Barracuda 4 4.3GB	\$1179
FWB	
JackHammer for PCI	\$379
SledgeHammer	call
CD-ROM	

APPLE 600e EXT. 4X	\$289
NEC 6Xe	\$469

RADIUS

ThunderColor 30/1600	\$1899
ThunderIV GX 1600	\$1589
ThunderIV GX 1152	\$1299

SpigotPower AV	\$579
VideoVision 2.5.1	\$2349
Telecast Upgrade	\$3369
NUMBER NINE	
IMAGINE 128 8MB	\$1129
IMAGINE 128 4MB	\$689
ATI	
XCLAIM 2MB	\$299
XCLAIM 4MB	\$399
TRUEVISION	
TARGA 1000 PCI	\$2189
TARGA 2000 PCI	\$3359
AGFA	
ARCUS II	\$1799
STUDIOSCAN IISI	\$699

NEW!

MEMORY

LOW PRICES

DIMM (168PIN)

8MB/16MB	\$109/\$189
32MB/64MB	\$349/\$699
256K/512K	\$89/\$149
1MB V-RAM	\$69

SIMM (72PIN)

4MB/8MB	\$59/\$99
16MB/32MB	\$189/\$349

PB5300/190

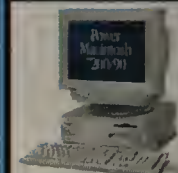
4MB/8MB	\$149/\$189
16MB/32MB	\$329/\$699

PB500

8MB/16MB	\$249/\$329
32MB	\$799

All memory products are new by major brands with lifetime warranty

7200



• PowerPC 601 running at 90 or 120 Mhz • 3-PCI expansion slots • 8MB of RAM expandable • 4x CD ROM • Mon. & Kb sold separately

16/500/CD/90	\$1399
32/1GB/CD/90	\$1789
8/1GB/CD/120	\$1769
16/1.2/CD/L2/120	\$1979

PERFORMA

5215 8/1GB/CD	\$1399
6116 8/700/CD	\$1199
6205 8/1GB/CD	\$1679
6230 16/1GB/CD	\$1649
6290 8/1GB/CD	\$1749
6300 16/1GB/CD	\$2099
6320 16/1GB/CD	\$2339

MONITOR



APPLE

14"	\$279
15" REF.	\$299
15"	\$409
1705	\$669
1710 Vision	\$889
1710 AV	\$949
20"	\$1819

SONY

15SF II	\$479
17SF II	\$879

RADIUS

PressView 21SR	\$3099
IntelliColor 20e	\$1699

NEC

XV15 PLUS	\$459
XV17 PLUS	\$779
XE21	\$1779
XP21	\$2129

CUSTOM

CONFIG.

AVAILABLE

CALL THE MAC EXPERTS!

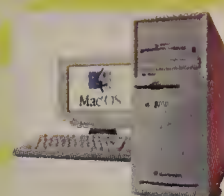


MacUser Labs Says:

"Nice Price, Nice Image Quality, Nice Controls, — Nice Monitor!"

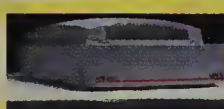
"Top Image-Quality Honors!"

PowerMax Trinitron™ monitors are designed specifically for the rigorous demands of the Macintosh. They ship complete with Mac-ready cables and adapters, a three year warranty, and our satisfaction guarantee: if the monitor is not just right, we'll replace it for you!



We Stock PowerComputing!

This Month's Special: PowerTower 180 MHz 604-based CPU with 32 mb ram, 2 gig hard drive, internal CD, 3 PCI slots, extended keyboard, 17" Trinitron monitor. Only **\$5339**, or just **\$189 per month!**



This Month's Product Special:

The Agfa Arcus II scanner is our best-selling high-end scanner. It features a 36 bit pixel depth and resolutions up to 3600 ppi! Includes transparency adapter. Only **\$1899!**

PowerMax Trinitron™ Monitors

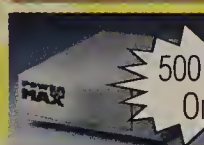
Model PM14T	25 mm dot pitch- up to 1024x768	\$339
Model PM15T	25 mm dot pitch- up to 1280x1024	\$449
Model PM17T	25 mm dot pitch- up to 1280x1024	\$839
Model PM17TE+	25 mm dot pitch- up to 1600x1280	\$999
Model PM20T	30 mm dot pitch- up to 1600x1280	\$1749

Wacom Tablets

ArtPad II 4x5 w/erasing Ultra Pen	\$145
ArtZ II 6x8 w/erasing Ultra Pen	\$319
ArtZ II 6x8 w/erasing Ultra Pen & Painter 4	\$615
ArtZ II 12x12 w/erasing Ultra Pen	\$439
ArtZ II 12x12 w/erasing Ultra Pen & Painter 4	\$745
ArtZ II 12x18 w/erasing Ultra Pen	\$729

We carry all Wacom Accessories and Pens!

PowerMax External Hard Drives



500 Meg External
Only **\$179!**

We specialize in
customizing
complete array
systems!

PowerMax External 500 Mb Drive	\$179
PowerMax External 1.2 Gig Drive	\$348
PowerMax External 2.0 Gig Drive	\$588
PowerMax External 2.0 Gig Drive 7200 RPM	\$799
Iomega Zip Drive	\$195
Iomega Jaz Drive	\$588
Syquest EZ 135 Mb Drive	\$195
Syquest 200 Mb Drive WITH cartridge	\$399
Optima Recordable CD- Read and write to CDs!	\$1299
Optima MiniPak 8000DAT tape drive	\$1059

We are authorized dealers for all these lines- you can't beat our prices, knowledge and support!

• Adobe • Agfa • Atto • Canon • DayStar • DEC • Epson • Fargo • GCC • Global Village • Hewlett Packard • Iomega • Kodak • Kingston • LaCie • Mag • Magnavox • Microtek • Mitsubishi • NEC • Newer • Nikon • Optima • PowerComputing • QMS • Quantum • Radius • Samsung • Seagate • Seiko • Sony • SyQuest • Tektronix • TrueVision • Umax • US Robotics • Visioneer • Xante

**POWER
MAX**
Knowledge is Power

800-613-2072

Call today for your free PowerMax Catalog!

Local line: (503) 624-1827 • Fax (503) 624-1635

HTTP://WWW.Illuminatus.Com/PowerMax • E-Mail: PowerMax@Illuminatus.com

Prices subject to change without notice. Prices reflect cash discount.

Visa • MasterCard • Discover • Amex • COD • Leasing • P.O.s

Customizable Mac Systems

You won't find anyone with more Macintosh expertise than the experienced consultants at PowerMax™. Give us a call today for a competitive quote and expert advice. Make our knowledge your power!

Looking for a 7200/75? Ask us about getting a 7200/90 for less than \$100 more!

Ref Performa 637 8/350/CD	\$648
PowerMac 7200/90 8 Ram/CD	\$1148
PowerMac 7200/120 8 Ram/CD	\$1588
PowerMac 7600/120 16 Ram/CD	\$2588
PowerMac 8500/120 16 Ram/CD	\$2998
PowerMac 8500/132 16 Ram/CD	\$3348
PowerMac 8500/150 16 Ram/CD	\$3988
PowerMac 9500/150 16 Ram/CD	\$4088
PowerCurve 601/120 8/850/CD	\$1795
PowerCenter 604/132 16/Gig/CD	\$2495
PowerCenter 604/150 16/Gig/CD	\$2995
Performa 5215 8/Gig/CD/Fax/15"	\$1648
Performa 6205 8/Gig/CD/15"/Modem	\$1748
Performa 6290 8/1.2 Gig/CD/14"	\$1888
Performa 6320 16/Gig/CD/15"/TV/Video	\$2548
Powerbook 190CS 8/500	\$1449
Powerbook 5300CS 8/500	\$1949
Powerbook 5300CS 16/750	\$2449
Powerbook 5300C 8/500	\$2449
Powerbook 5300C 16/750	\$2848
Powerbook 5300CE 32 Ram/Gig	\$4199

Super Software Specials

We can beat almost any price on advertised software!

Adobe PhotoShop 3.05 CD only	\$199
Adobe SiteMill	\$369
Adobe Illustrator 6.0	\$379
Microsoft Office 4.2 CD	\$429
Adobe Premiere 4.2	\$449
Adobe PageMaker 6.0	\$499
Adobe PhotoShop 3.05	\$499

Why Buy From PowerMax?

- Over 90% of our orders ship within 24 hours. We stock every major brand of Mac product from Adobe to Zoom!
- We speak plain English- no technobabble or high pressure.
- We offer flexible terms, and are experts on easy leasing!
- We consult with you, we want to make sure what you buy is what you need.
- Unlike most catalog outlets who try to keep prices low by limiting service options- we are a dealer who actually offers more expertise and service than most local full-priced dealers! We keep prices low through aggressive purchases, high volume and years of experience!
- All we ask is that you call a couple of the other guys first- then call us. You'll really appreciate our difference!

CIRCLE 446 ON READER SERVICE CARD

PC SYSTEMS DESIGN CORPORATION

800-833-0128

International Inquiries Please Call: (714) 572-8292

call for our
new, free
catalog

HARD DRIVES		
QUANTUM	Fireball 1080MB 11ms	\$ 245
QUANTUM	Fireball 1280MB 11ms	\$ 265
QUANTUM	Atlas 2.0GB 8ms	\$ 675
QUANTUM	Atlas 4.3GB 8ms	\$ 925
MICROPOLIS	M4221 2.1GB 8ms	\$ 589
MICROPOLIS	M3243 4.3GB 8ms	\$1025

All Hard Drives Listed Above Come With A 30 Day Money Back Guarantee

All drives listed are internal. Add \$80 for most external cases.

We Also carry:

Epson, NEC, Reliata, Radius, Daystar & much more! Call Now!

REMOVABLE & F/W DRIVES		
IOMEGA	Zip 100 / Jaz 1GB	\$ 197 / \$ 597
SYQUEST	EZ 135 w/1 cartridge - 14ms	\$ 199
MICROPOLIS	3243W 4.0GB Fast & Wide	\$1095
QUANTUM	4.2GB Fast & Wide 8ms	\$1015
FWB	Jack Hammer PCI Card	\$ 375
FWB	Jack Hammer Nubus Card	\$ 455

CD ROM / SCANNERS		
SONY	External SCSI 4x CD	\$ 195
TOSHIBA	3701 Internal SCSI 6x CD	\$ 225
TOSHIBA	3701 External SCSI 6x CD	\$ 275
NEC	4xc External 7-disc chgr	\$ 335
MICROTEK	ScanMaker III flatbed	\$1985
AGFA	Arcus II - 39-bit color scanner	\$1995

MODEMS / PRINTERS		
GLOB. VILL	Teleport Platinum 28.8k	\$ 195
GLOB. VILL	Powerport Plat. 28.8k PC Card	\$ 325
GLOB. VILL	Powerport Pro 28.8k/Ethernet	\$ 495
MEGAHertz	28.8k PC Card w/ xJACK	\$ 279
HP	DeskJet 855 CXI Inkjet	\$ 479
HP	LaserJet 5MP Laser Pptr	\$ 989

Quantum		
IBM		
hp		
SyQuest		
COMPAQ		
NEC		
Leasing Available		

MONITOR SPECIALS		
SONY Trin.	15 SX .25 dpi	\$ 419
SONY Trin.	17 SF II .25 dpi	\$ 645
SONY Trin.	20 SF II .25 dpi	\$1695
MAG Innovation	DX17T Trinitron 26	\$ 795
Portrait Disp	Pivot 1700 .25/26	\$ 929 / \$ 999

WE'RE ALSO YOUR ONE STOP SOURCE FOR MEMORY NEEDS • CALL FOR LATEST PRICES

Buy From The Systems & Peripheral Specialist!

24 Hour Fax Line: (714) 572-8051

Corporate, Educational & Governmental P.O.'s Welcomed!

Product information and prices are subject to change without notice.

PC Systems is not responsible for typographical errors.

CIRCLE 514 ON READER SERVICE CARD

MONITORS

APPLE 1710 AU 17" MON	1099
APPLE 1705 17" MON	799
APPLE 1710 MS 17" MON	999
APPLE MS 20" MON	1799
APPLE MS 15" MON	429
APPLE MS 14" MON	329

HARD DRIVES

SPECIAL!
2Gig Saturn Ext.
\$569⁰⁰

GRAPHICS CARDS

SPECIAL!
2MB ATI Xclaim GA
\$295⁰⁰

**SPECIAL 256K
LEVEL2 CACHE**

\$125⁰⁰

POWERMAC 7200/7500/8500

InterMac Technologies

MEMORY SALE!

16mb Simms	\$199 ⁰⁰
32mb Simms	\$399 ⁰⁰
8mb Dimms	\$89 ⁰⁰
16mb Dimms	\$179 ⁰⁰
32mb Dimms	\$379 ⁰⁰
64mb Dimms	\$679 ⁰⁰

WE WILL BEAT YOUR BEST PRICE ON 72pin SIMMS & 168pin DIMMS!!!
4MB - \$59 / 8MB - \$89 / 16MB - \$179 / 32MB - \$379 / 64MB - \$679
All memory products are brand new with lifetime warranty 60/70ns

800-914-6227

Service/Tech (847) 696-3434 • Fax (847) 518-8856 Open 7 Days 9am-9pm. All product is new unless otherwise stated and carry manufacturer warranty. Returns subject to 15% restocking fee. No returns without RMA. Credit Cards are verified to prevent fraud. Call for volume discounts. Corp/Govt. Po's accepted subject to credit approval. Prices discounted 5% for COD/Cashiers Check and can change without notice. Fedex Overnight Shipping. Configurations at no extra cost. All product shipped same day!!!

E-Mail InterMac@aol.com Internet <http://www.imac.com>

CIRCLE 415 ON READER SERVICE CARD

POWERMACS

9500/150 16/2gig/CDU	4495
9500/132 16/2gig/CDU	3695
9500/120 16/1gig/CDU	3095
8500/150 16/2gig/CD	3095
8500/132 16/1.2gig/CD	3695
7600/120 16/1.2gig/CD	2695
7200/120 16/1.2gig/CD	2295

POWERBOOKS

SPECIAL!
5300ce/117 32/1.1
\$3899⁰⁰

PRINTERS

SPECIAL!
12/600ps Color Laser
\$5499⁰⁰

*** SONY MADE 20" TRINITRON MON**

\$1,399⁰⁰

* REFURBISHED



MacUSA
Since 1983
800-809-0880
Voice: 818-704-8923
Fax: 818-704-9858
Check out MacUSA on the Web at:
<http://www.macusa.com>
Dealer and International Orders Always Welcome!
We'll Beat Any Price!
Reach us on the Internet: 1. macs@ix.netcom.com
2. macusa@earthlink.com
Free Shipping for All California Purchases.
Discover, Visa, American Express, & MasterCard
24422 Vanowen Street, Canoga Park
California 91307, U.S.A.
PRICES REFLECT CASH DISCOUNT AND ARE SUBJECT TO CHANGE

PowerMac		
7200/90	16/500/CD	\$\$\$CALL\$\$\$
7200/120	16/1.2GB/CD	\$\$\$CALL\$\$\$
7200/120	8/1.1GB/CD	\$\$\$CALL\$\$\$
7200/120	8/1.2GB/DOS/pc card	\$\$\$CALL\$\$\$
7600/120	16/1GB/CD	\$\$\$CALL\$\$\$
8500/120	16/1GB/CD	\$\$\$CALL\$\$\$
8500/120	16/2GB/CD	\$\$\$CALL\$\$\$
8500/132	16/1.1GB/CD	\$\$\$CALL\$\$\$
8500/150	16/2GB/CD	\$\$\$CALL\$\$\$
9500/132	16/2GB/4xCD/graphic card	\$\$\$CALL\$\$\$
9500/150	16/1GB/4xCD	\$\$\$CALL\$\$\$
Performa Bundle		
5215/75	8/1GB/CD Bundle	\$\$\$CALL\$\$\$
6116/60	8/700/CD/Bundle	\$\$\$CALL\$\$\$
6200/75	8/1GB/CD	\$\$\$CALL\$\$\$
6205/75	8/1GB/28.8mod/Bundle	\$\$\$CALL\$\$\$
6220/75	16/1GB/CD/VI/TV	\$\$\$CALL\$\$\$
6300/100	16/1GB/CD/Bundle	\$\$\$CALL\$\$\$
6320/120	16/1.2GB/TV/VI/28.8/15"	\$\$\$CALL\$\$\$

PowerBook	
190	8/500
2300	8/750
5300 CS/100	8/500
5300 CS/100	16/750
5300 C/100	8/500
5300 C/100	16/750
5300 CE/117	32/1Gig
Call for New Powerbook line	
Call for Workgroup server	
Monitors	
Apple, NEC, Radius, Sony, Viewsonic	
Scanners	
Agfa, Apple, Epson, Hewlett Packard, Microtek	

Printers	
Apple	
Stylewriter/Laserwriter	\$\$\$CALL\$\$\$
Hewlett Packard	
Deskwriter/4M+/5MP/5SI	\$\$\$CALL\$\$\$
Epson, GCC, NEC, OkiData also available	
Software Blowout!!!	
MS Office V4.21 (Excel, Word, Powerpoint)	\$525 \$195!!
Microsoft Word 6	\$99
Microsoft Excel 5	\$99
Microsoft Powerpoint 4	\$99
Adobe Photoshop	\$275
Adobe Illustrator	\$275
Adobe Premier	\$295
Adobe Pagemaker	\$295
Macromedia Freehand	\$295

CIRCLE 448 ON READER SERVICE CARD

ZIP DRIVE CARRYING CASE



- Serious protection for your Iomega Zip Drive® & accessories.
- Easy to carry ergonomic design.
- Tough, shock and water resistant neoprene and nylon.
- Secure back pocket for disk storage.

\$33.00
plus \$4.95 shipping & handling in Continental USA
CompuSafe
PROTECTIVE CASES FOR LAPTOPS, PALMTOPS & ACCESSORIES
1-888-659-6500 Toll Free

CIRCLE 453 ON READER SERVICE CARD



Dealers and International Sales OK
Mail Order / Retail / Wholesale
Internet Services

PowerPC's	Memory
PowerBooks	Upgrades
Printers	Hard Drives
Scanners	Modems
Monitors	Keyboards

(800) 622-5557 (818) 225-9327
Fax: (818) 225-8627
E-Mail: mactalk@primenet.com

CIRCLE 540 ON READER SERVICE CARD

BUYERS

- ✓ Large selection of over 20,000 seller listings to choose from!
- ✓ All equipment is thoroughly tested, serviced, & cleaned.
- ✓ Buyers have a two-day escrow period to check equipment.
- ✓ Bonded, licensed, and insured, escrow agents

SELLERS

- ✓ No fee for listing equipment.
- ✓ Quick turn-around on payment.
- ✓ List and browse equipment for sale on our web page.
- ✓ <http://www.uce.com>
- ✓ Retrieve price indexes on fax info line.



EXCHANGE
1-800-755-3033
Open 9-7 pm M-T-F

CIRCLE 478 ON READER SERVICE CARD

Ad # MW0896 b Apple Quantity Deals

NEW 9500/150 0/0 CD Qty.	\$3195
NEW 8500/150 16-2GB CD Qty.	\$4195
NEW 8500/132 16-1GB CD Qty.	\$3495
NEW 7600/120 16-1GB CD Qty.	\$2695
NEW 7200/120 16-1GB CD Qty.	\$1895
NEW 7200/100 8-500 CD Qty.	CALL
NEW WS.8550/132 24-2GB, Internet	\$5795
NEW WS.7250/120 16-1.2GB, CD	\$2895
9500/132 16-1GB-CD Qty.	\$3195
8500/120 16-2GB CD Qty.	\$3095
8500/120 16-1GB CD Qty.	\$2895
7500/100 16-1GB CD Qty.	\$1895
7200-90/75 8-500 CD Qty.	\$1175/935
PowerBook 150 8/240MB Qty.	\$695
PowerBook 520C/520 Qty.	\$1095/765
PowerBook 5300 8-500MB Qty.	\$1145
PowerBook 5300c 16-750MB Qty.	\$2695
PowerBook 5300ce 32-1.1GB Qty.	\$3395
PowerBook 5300cs 8-500MB Qty.	\$1695
PB DUO 280/280C	\$985/1395
Performa 6200 8-800 CD Qty.	\$965
Performa 5200/75 8-1GB-CD Qty.	\$1295
Apple TV/DOS Card	\$199/229
KODAK 450GL Printer	\$345
Polaroid Sprint Scan 35	\$1295

Full Product Line Of Hewlett Packard 110/220Volt Distributor

WACOM ArtZ II 6x8/ArtPad 4x5	\$295/119
WACOM ArtZ II 12x12/12x18	\$389/649

Sales (818) 787-3282
Export " 780-9457
All Prices Are Based on C.O.D. Order & Subject To Change!

WE Distribute full product line of:

ThinkPad 760LD P/90 8/810 HD, CD	\$4295
TP. 760 CD P/120 8/1.2GB	CALL
PS/2 & Aptiva & IBM Parts	Stock
ThinkPad 760ED/760EL/ 365XD etc....	CALL
LTE Elite 5000, 5100 & 5200	CALL
LTE Elite 4/75C 8/540	\$1695
Compaq Contura 430C 8/420	\$1695
Aero 4/33C 4/250	\$850
Contura 410CXDX2/50 4/350 Active	\$1275
Tecra 700CS/CT, Tecra 710 & 720	CALL
TOSHIBA T-610CT P/90 8/720	\$2995
T100CS/410CS/2150CDS	\$1795/2895/1895
Packard Bell DX2/66 8/540	\$599

MEMORY Quantity Deals

DIMMs & SIMMs			
For Power Mac 7200, 7500, 8500, 9500			
8/16MB	\$99/195	32/64MB	\$299/599
For Power Mac 6100/7100/8100/ Performa, Quadra, & Centris			
4/8MB	\$49/95	16/32MB	\$185/359
PowerBooks Memory			
500 /5300 Series		Duo Series	
4/8MB	\$75/140	4/8MB	\$95/165
16/32MB	\$275/550	12/16MB	\$275/335

COMPU.D
International, Inc.
1-800-929-9333

Personal & Business Leasing by PFO CAPITAL

Call (818) 787-1423
FedEx. Fast Worldwide Delivery -DHL-
Call for product & Price List

Software Specials

MS Office 4.2.1	\$395	Photoshop 3.05	\$469
MS Excel 5.0	\$195	Illustrator 6.0	\$295
MS Word 6.0.1	\$199	PageMaker 6.0	\$395
Wordperfect 3.1	\$199	Freehand 5.5	\$295
AppleShare	\$645	QuarkXpress3.32	\$645

Removable Storage

IOMEGA Bernoulli Zip Drive EXT.	\$199
IOMEGA Bernoulli Jazz Drive EXT.	\$599
SyQuest 200/270 Ext. w/1 cartridge	\$425/425
SyQuest EZ Drive 135MB Ext. w/1 cartridge	\$219
Maxoptics Tahiti II 1.3GB Optical Ext.	\$699

GlobalVillage Modems Supra

TelePort Platinum 28.8	\$189	Simple Internet 28.8 Ext.	\$189
PowerPort 1xx Pltmm.V.34	\$329	28.8 V.34	\$219
PowerPort Platinum PC	\$328	Express 14.4+	\$98
PowerPort " Pro PC	\$489	Express 28.8 Ext.	\$159
PowerPort Gold 14.4	\$179	28.8 PB Fax/Modem	\$189

UMAX Scanners

UC630/840	\$310/350
UC1260	\$599
VistaS6/S12	\$399/699
Gemini	\$1249
PowerLook II Pro	\$2599

FAX (818) 787-5555/FAX Back 787-4548
E-Mail: csales@compu-d.com
Internet: http://compu-d.com

CIRCLE 541 ON READER SERVICE CARD

"Custom Configuration Specialists"

- Dealers & International sales welcome!
- Best Prices, Service & Delivery.

POWERMACS	PERFORMA
7200/75 8/500CD 895.	6300CD 16/1.2/CD 2095.
7200/90 16/500 CD 1195.	6290CD 8/1G/CD 1795.
7200/120 8/1G/CD 1785.	6230CD 16/1G/CD 2285.
7200/120 16/1.2/CD 2165.	6220CD 16/1G/CD CALL.
7500/100 16/1G/CD 1875.	6205CD 8/1G/CD CALL.
7600/120 16/1G/CD 2745.	6200CD 8/1G/CD 1495.
8500/120 16/1G/CD 2945.	6116CD 8/1G/14" 885.*
8500/132 16/1G/CD 3595.	6115CD 8/1G/14" 845.*
8500/150 16/2G/CD 4345.	5215CD 8/1G/CD 1095.*
9500/120 16/1G/CD 2745.	640 Dos 12/500/CD 995.*
9500/132 16/1G/CD 3495.	638CDV 8/250/CD 945.*
9500/150 16/2G/CD 4499.	637CD 8/350 CD 595.*
7100/80 8/700 CD 1145.	Epson Stylus Pro-XL \$ 190 8/500
8100/100 8/700 1995.	1695.
8100/110 16/2G/CD 2795.	Iomega Jazz drive 520C 4/240
Call us for Memory !!!	\$ 585 540C 4/320

Infinity Micro
2289 Westwood Bl. LA, CA. 90066 Tel 310-470-9426 Fax 310-470-4956
One stop shopping for all your software & hardware needs! Most Complete Mail order Source!

800-589-1234

POWERBOOKS

5300CE 32/1GIG	3775
5300C 16/750	2795
5300C 8/500	CALL
5300CS 16/750	2395
5300CS 8/500	1875
5300 8/500	1145
190CS 8/500	1445
190 8/500	1285
520 4/240	785
520C 4/240	1095
540C 4/320	1995

VIDEO CARDS

Thunder30-1152	3775
Thunder30-1600	2795
Thunder Color/30-1152	2395
Thunder Color/30-1600	1875
VideoVision Studio 2.51	1145
TrueVision Targa 2000Pci	1445
TrueVision Targa 2000PRO	1285
Number 9 Imagine 128	785
IMS Twin Turbo 128	1095
ATI 4MB PCI card	1995

SCANNERS

795. Epson ES-1200c Pro	1175
1145 Epson ES-1000	709
1499 Paperport VX	279
1795 Umax PowerLook Pro	1875
2085 Vista S12-Pro	895
3595 Vista S8-Pro	749
685 Agfa Acruss II	655
525 Agfa StudioScan IISI	1795
425 HP Scanjet 4C	875
Laser, P.S. L.I.I, 300dpi	919

PRINTERS

Stylewriter 1200	179.
Stylewriter 1500	279.
Stylewriter 2500	369
Stylewriter 2200	279.
Stylewriter 2400	297.
Laserwriter 4/600	CALL
Laserwriter 360	CALL
Laserwriter 16/600	1995
Color Laser 12/600PS	5875.
GCC Elite-XL 808	2795.
GCC Elite-XL 616	2425.
Fargo Primera Pro	1325.
Fargo Pictura 310	3395
Fargo Pictura 310E	4295.

GCC TECHNOLOGIES
DAYSTAR
Seagate
HEWLETT PACKARD
Apple
QMS

RADIUS MONITORS

Apple 15" Multiscan	299.
Apple 1705/1710	635/885.
Apple 20" Multiscan	1395.
PrecisionColor 17	685.
PrecisionColor 21	1295.
PrecisionView 17	845.
PressView 17 SR	1975.
Intellicolor 20e	1395.
SuperMatch21TXL	1395.
PressView 21T	1895.
PressView 21SR	2995.
Sony 15SF/17SF2	485/875
Sony 17SE2/20SF2	875/1745
Portalt 1700 .26	1035
Portalt 1700 .28	985

CIRCLE 501 ON READER SERVICE CARD

Active Buyers turn to the

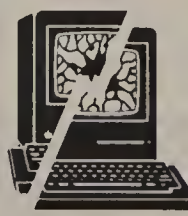


Over 590,000 Macworld subscribers turn to the Macworld Shopper monthly. 531,250 of these buyers have taken action as a result of seeing an ad in the Macworld Shopper.

Shopper Purchase Study 995

SAFWARE

Insures Your Computer



The ComputerownersSM Policy insures you against theft, fire, accidental damage, lightning even power surge! Replace or repair for \$49 a year. Available in the U.S. & Ontario.

1-800-800-1492

SAFWARE, The Insurance Agency Inc.
2929 N. High St., PO Box 02211
Columbus, OH 43202

CIRCLE 437 ON READER SERVICE CARD

WANTED:

USED MACS!
BUY • SELL • TRADE

Top \$ Paid Via FedEx Next Day Air!

Friendly, courteous service from the Pacific NW!

PACIFIC COMPUTER EXCHANGE
PORTLAND, OR

1-800-790-3881
FAX 503-239-8424

CIRCLE 451 ON READER SERVICE CARD


THE NEW POWER MACS ARE HERE HP PRINTERS, MEMORY, SOFTWARE, SCANNERS & SYQUEST.

WAITING FOR YOU!

8500¹⁵⁰ 16/2GB/CD 4,449 8500¹³² 16/1.6GB/CD 3,749
7600¹²⁰ 16/1.2GB/CD 2,859 7200¹²⁰ 16/1.2GB/CD 1,849

WE GIVE YOU THE BEST DEAL!

30 Days Money Back Guarantee



SCANNERS
MICROTEK
Better Images Through Innovation®

SCAN MAKER E3	369
SCAN MAKER E6 PRO	699
PAGE WIZ	199
TRANSP. ADAPTER	269

PRINTERS & SUPPLIES

Laserwriter Color	CALL
Laserwriter 4/600	CALL
Laserwriter 16/600	CALL
Stylewriter 2500 Color	CALL
Apple toners	CALL
Apple printer cartridges	CALL

SyQuest DRIVE CART.

88MB	42
200MB	339 60
270MB	359 52
EZ 135MB	189 19
ZIP - IOMEGA	199 14
JAZZ-IOMEGA	129 429

MEMORY DIMM SIMM

8MB	79	79
16MB	159	159
32MB	299	299
64MB	599	

HARDDRIVES

540 MB	129
840 MB	179
1080 MB	269
2.2 GB	499
4.3 GB	799

NETWORKS

ASANTE HUBS	CALL
FOCUS HUBS	CALL
FARRALON HUBS	CALL
TRANSCEIVERS, BRIDGES AND ALL NETWORK ACCESSORIES.	

FAX

Supra Express 28.8	159
Supra Fax 28.8	209
ROBOTICS 28.8	199

UMAX The Magic of Color®

ALL NEW MODELS AT SALE PRICES!

VISTA S6E	399
VISTA S6E PRO FULL	599
VISTA S8 w/Transp. Adapter	799
VISTA S12 PRO FULL	849
PAGE OFFICE	319

MAC SPOT 800-680-1112

FAX 305-591-4391

Lease quotes are based on a 60 months lease program, 10% buyout option at the end of the term - Other programs available. *FREE CARTRIDGE WHEN YOU BUY A DRIVE. TOTALLY FREE DELIVERY BY FedEx. *FREE 2ND DAY DELIVERY. ALL RETURN SHIPMENTS EXCLUDED. *C/P 1/96

CIRCLE 482 ON READER SERVICE CARD

One call gets it all.

The brands, the price, the service!

Printer Supply

HP LaserJet 4M,	\$89 ⁹⁵
Apple LaserW. Pro 600	
Apple Color StyleWriter Pro:	\$6 ⁰⁰
Cyan, Magenta or Yellow	

SONY

4mm Data Tapes	
x 60m	\$ 6.85
x 90m	\$ 8.10
x 120m	\$ 20.95

CD-R 74

VERBATIM • TDK • SONY • 3M • MAXELL

Call



SyQuest®

270mb Starting at	\$58
88mb Maxell starting at \$42	
44mb Maxell starting at	\$36

Opticals

Osaka	\$16
230MB	
128MB	\$ 13.95
1.3 GB	\$ 51.00

7 - 7, CST
MONDAY - FRIDAY

PO BOX 1674 • BETHANY, OK 73008
FAX 405-495-4598 • PH 405-789-0888



DisketteCONNECTION

1-800-654-4058

CIRCLE 485 ON READER SERVICE CARD

MacALLY™ Peripherals

We work hard for your Macintosh™



Call us for the Dealers near you

Please call today: 1-800-644-1132

For more product information, please visit <http://www.macally.com>

CIRCLE 418 ON READER SERVICE CARD



MacMarket
1-800-905-3034

Fax: 818-708-6399

LOW RATES *Call For Your Catalog*

LEASING AVAILABLE

FAST

UMAX
Computer Corporation
SUPERTRAC
LOWEST PRICE ANYWHERE
S900L 2GB HD 4MB IMS Card #A1622 **CALL**
S900D 16MB RAM #A1624 **CALL**

ATTO
Vantage PCI-Ultra SCSI ... #329 #A4516
Express PCI-MC ... #729 #A4519
Express PCI-SC PCI ... #293 #A4518
SiliconExpress/INuBus ... #799 #A4515

FWB
PCI Technology
Jackhammer Accelerator #A4417 **\$359**

DAYSTAR
100MHz PowerPro 601 #1159 #A4500
Quadra 610, 650, 700, 800, 950, Centris 610,
650 (610 needs an adapter)
100MHz Turbo 601 #1139 #A4509
IICI, IISI, IIVx, IIVI and Performa 600
100MHz PowerCard 601 #919 #A4498
Performa, Quadra, LC475, LC575, 605, 630

GLOBAL VILLAGE
COMMUNICATION
PowerPort PC Cards
PlatinumPro28.810Base-T #479 #F8147
PowerPort Platinum 28.8 ... #319 #F8150
TelePort Platinum #189 #M8120
TelePort Gold II #104 #M8123

SupraFAXmodem
Fax/Modem28.8v.34 ... #189 #F8109
SupraExpress28.8+s ... #139 #F8107

Inventory Reduction

PowerMac 8100/100MHz
8/700 #A1350 **\$1749**

PowerMac 6100/DOS
16/500/CD #A1373 **\$979**

PowerBooks
5300cs/8/500 #A1130 **\$1849**
5300cs/16/750 #A1133 **\$2389**
5300c/8/500 #A1121 **\$2389**
5300c/16/750 #A1118 **\$2849**
5300ce/32/1GB #A1115 **Call**
190cs/8/500MB #A1109 **\$1449**
150/4/250 #A1136 **\$599**

APPLE Monitors
MultipleScan1705 #M6638 **\$659**
Vision1710 #M6500 **\$899**
Vision1710AV #M6567 **\$1049**
MultipleScan20" #M6564 **\$1859**

HEWLETT PACKARD
660c 600X300 #P3223 **\$289**
5MP 600dpi #P3232 **\$999**
4MV 600dpi #P3235 **\$2649**
DeskJet 1600CM #P3410 **\$1939**

AGFA
The complete picture
Studio Scan IISI #685 #S8477
Arcus II #1795 #S8482

CIRCLE 420 ON READER SERVICE CARD

EPSON Printers
StylusColor 2 InkJet ... #299 #P3294
StylusColor Pro InkJet #485 #P3288
StylusColor ProXL ... #1699 #P3291

PINNACLE
Tahoe 230 #489 #E7228
Vertex 2.6GB #1266 #E7253
RCD 5040 #884 #E7248

PowerMac 9500/132/150MHz
48/1GB/CD/ATL132 #A1241 **\$3999**
80/2GB/CD/ATL132 #A1228 **\$4670**
16/1GB/CD/ATL150 #A1662 **\$4595**

PowerMac 8500/120/132/150MHz
16/1GB/CD/120MHz #A1314 **\$2999**
48/2GB/CD/120MHz #A1322 **\$3699**
80/2GB/CD/120MHz #A1332 **\$3999**
16/2GB/CD/132MHz #A1658 **\$3595**
16/2GB/CD/150MHz #A1660 **\$4399**

PowerMac 7600/120MHz
16/1GB/CD #A1656 **\$2749**

PowerMac 7200/75/90/120MHz
16/500MB/CD/75MHz #A1387 **\$1099**
16/500CD/90MHz #A1187 **\$1299**
16/1GB/CD/120MHz #A1650 **\$1995**

APPLE Printers
StyleWriter 1200 #P3265 **\$199**
StyleWriter 1500(color) #P3369 **\$269**
StyleWriter 2500(color) #P3367 **\$389**
LaserWriter 4/600PS #P3256 **\$795**
LaserWriter 16/600 #P3250 **\$2139**

Performa Systems
5215CD #A1191 **Call**
6200CD #A1190 **Call**
6300CD #A1193 **Call**

SONY
Sony 15 SF2 ... #489 #M6438
Sony 17 SF2 ... #869 #M6580
Sony 20 SF2 ... #1679 #M6574

Newer
PB500 Upgrades*117MHz*PowerPC
(CPU Only) #579 #A4540
w/4MB RAM ... #759 #A4542
w/8MB RAM ... #899 #A4544

Newer 64BIT DIMMS
8MB #135 #M1448
16MB #247 #M1451
32MB #555 #M1454
64MB #1049 #M1457

NUMBER NINE
Imagine128.8MB **\$1,079** V9248

INTERGRATED MICRO SOLUTIONS
TwinTurbo128MB
(4MB) #529 #V9240
(8MB) #939 #V9238

XclaimGA
w/2MB VRAM #199 #V9165
w/4MB VRAM #459 #V9162

TRUEVISION
Targa 2000 PCI #3768 #V9200

Adaptive Solutions.
PowerShop PCI #1869 #V9244

MEMORY

Please call for the latest prices

DIMMS
8MB*64BIT*168PIN #89 #M1628
16MB*64BIT*168PIN #175 #M1625
32MB*64BIT*168PIN #319 #M1622
64MB*64BIT*168PIN #629 #M1619

SIMMS
8MB*32BIT*72PIN 60NS ... #99 #M1598
16MB*32BIT*72PIN 60NS #189 #M1595
32MB*32BIT*72PIN 60NS #329 #M1604

PowerBook Memory
5300 & 190
4MB #M1386 #139 16MB #M1390 #339
8MB #M1387 #209 32MB #M1393 #699
(32MB FOR 5300 ONLY)

radius
Precision View 17 #949 #M6606
Press View 21SR #3049 #M6609
PrecisionView 21 #2229 #M6614
PressView 17SR #1899 #M6600

Portrait
Pivot 1700 (26) #979 #M6599

International Call: 818-708-6388
Customer Service & Technical
Support Call: 818-708-6388
All Prices reflect a Cash Discount. Any other
method is 2% to 4% higher. Prices are subject
to change without notice. All Returns are
subject to restocking fee, must be in original
package, condition & needs an RMA#. No
Refunds on Labor or Freight Charges. We
accept Visa, Mastercard, Discover &
American Express. P.O.s accepted from U.S.
Gov't, Schools & Corporations. Not
responsible for typographical errors.

DATA
MICRO COMPUTER INC.
800-345-1234
TEL (310) 398-3300
FAX (310) 391-2488

DEALERS & INTERNATIONAL SALES WELCOME!
Govt, Univers. 's & Corp. P.O.'s welcome

SPECIAL DEALS
Centris 650 8/500 895.
Panasonic Laser Printer 295.
Supramac 1702 17" 675.
Sanyo 4X CD-Rom 139.
24 Bit Video Card 399.

QMS RASTEROPS LM LASERMASTER TOSHIBA GCC TECHNOLOGIES UMAX radius hp HEWLETT PACKARD SUPERMAC IBM

POWERMAC	PERFORMAS	POWERBOOKS	PRINTERS & MONITORS
7100/80 8/700/CD 1145.	476 4/230 595.	5300CE 32/1 Gig 3885.	LaseWriter Pro 810 CALL
7100/80 AV/16/700 1575.	550 5/160CD 795.	5300C 16/750 2749.	LaserWriter 16/600 2095.
7200/75 8/500/CD 845.	575 5/250CD 995.	5300C 8/500 2695.	L.W. Select 360 1095.
7200/90 16/500/CD 1269.	578 8/320CD 1175.	5300CS 16/750 2295.	L.W. Select 300 475.
7200/120 8/16/CD 1789.	LC 580 8/500 820.	5300CS 8/500 1840.	Personal 320 595.
7500/100 16/1Gig/CD 2145.	630 4/250,KB 645.	5300 Mon 8/500 1155.	Personal 300 395.
7600/120 16/1Gig/CD 2745.	631 8/500CD 745.	190CS 8/500 1295.	Panasonic 300dpi 295.
8100/100 16/700/CD 2585.	635 4/250CD 695.	190 8/500 1280.	Radius 15" GS 385.
8100/110 16/2Gig/CD 2795.	638 TV/8/350CD,15" 1252.	540C 4/320 2095.	Radius Pivot 15" GS 474.
8500/120 16/1Gig/CD 3145.	640 Dos 12/500CD 1495.	540C 12/320/M 2575.	Radius Pivot 15" Clr 695.
8500/132 16/2Gig/CD 3595.	6116 8/700CD Call.	520C 4/160 1295.	Radius 20" GS 675.
8500/150 16/2Gig/CD 4389.	5215 16/1 GigCD 1395.	520C 4/240 1345.	Radius 21" GS 777.
9500/120 16/1Gig/CD 2750.	6200 16/1GigCD 1595.	520 4/240 850.	Radius 17" 745.
9500/132 16/1Gig/CD 3595.	6220 TV16/1GigCD 1729.	150 4/240 595.	Radius 20" 1450.
9500/150 16/2Gig/CD 4489.	6290 8/1 GigCD 1995.	Platinum Pro 495.	Radius Intellicolor20E 1495.
9500/150 128/4Gig/CD 6675.	Global fax/mdm 35.	Call for memory	Pressview 21T CALL

CIRCLE 464 ON READER SERVICE CARD

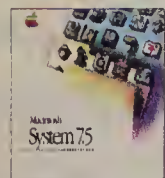
FAST CASH
For ALL Macs, Memory & Peripherals — Working or not
TOP DOLLAR PAID
Mac Traders (800)990-0995
(310) 576-2466 Mon.-Fri. 9 AM-6 PM Sat. 10 AM-4 PM (P.S.T.) Fax: (310) 394-7323
1511 Lincoln Blvd. (bet. Broadway & Colorado), Santa Monica CA. 90401

HAWKE
BUSINESS SYSTEMS
A Division of the CPS Services Group
Flemington, NJ 08822
(800) 875-2610
Fax - (908) 782-7027
Email - MacHawke@AOL.COM
We Buy, Sell, Trade & Repair Mac Equipment
Mac IISI 5/80 W/ Ext Kyb
Hi Res Color Monitor & Mouse \$599.00
Mac IICi 5/160, w/Cache, Ext Kyb
Hi Res Color Monitor & Mouse \$699.00
Mac Se 4/40 w/K&M - \$299.00
Classic 4/40 w/K&M - \$399.00
Classic II 4/80 w/K&M - \$499.00
Mac Se/30 4/80 w/K&M - \$575.00
Powerbook 140 Powerbook 165c
Powerbook 180 Powerbook 180c
Duo 210 Duo 230
6 Month Parts & Labor Warranty
Exchange Upgrades
Classic to Classic II - \$175.00
Mac II to Mac IICx w/ fdhd - \$249.00
Mac II to Mac IIFx w/ fdhd - \$499.00
Mac IICx to Quadra 700 - \$549.00
Mac IICi to Quadra 700 - \$499.00
Mac IICi to Quadra 900 - \$699.00
CPU Case Included in Exchange
Other Combinations Available - Call for Details
ImageWriter II with Cable \$169.00
StyleWriter 1200 - Apple Referb \$Call
Refurb 800 K Int Floppy Drives (w/t) - \$39.00
Refurb 1.44 Meg Int Floppy (w/t) - \$89.00

CIRCLE 457 ON READER SERVICE CARD



Parts & Upgrades



\$99 Bundle

- System 7.5 CD
- ClarisWorks 3.0 CD
- internal 1/2 height 160MB HD
- Global Village Bronze modem



IIx 5/160

\$549

MONITOR, MOUSE AND KEYBOARD
includes ClarisWorks bundle

Apple PowerBook 520c



\$1399

- 4MB RAM
- 240MB Hard Drive
- dual-scan color display
- 25MHz 'LC040

FACTORY REFURBISHED

BARGAIN BASEMENT

MACINTOSH SYSTEM 7.5 CD.....	25.
1MB 30-pin 120ns SIMMS.....	10.
New Duo Type 1 Batteries.....	15.
Centris 650 Logic Board.....	299.
PowerBook 140-180 a/c adapter.....	49.
StyleWriter ink cartridges: 3 for.....	29.
Quadra 840AV Logic Board.....	499.
ImageWriter LQ ribbon.....	6.
Quadra 800 Logic Board.....	449.
IIx Power Supply.....	CALL.
PowerBook Canvas Tote Case.....	19.
Quadra 950 Logic Board.....	549.
Quadra 660AV NuBus Adapter.....	49.
Quadra 660AV Logic Board.....	399.
Personal NT Logic Bd.....	49.
Quadra 900 Logic Board.....	449.
Apple PowerCD Carrying Case.....	10.
40MB 1/3-height Hard Drive.....	29.

Macintosh Logic Board Upgrades

Personal NT to NTR printer upgrade	exchange \$69
LaserWriter II NT/NTX to IIx	exchange \$399 NT/299 NTX
Mac II or IIx to IIx	exchange \$299
Centris 610 to Quadra 660AV	exchange \$299
Quadra 660AV to PowerMac 6100/60	exchange \$599
Quadra 800/840AV to PowerMac 8100/80	exchange \$999
Quadra 800 to Quadra 840AV	exchange \$299
Quadra 650 to PowerMac 7100/66	exchange \$799
LC550 to LC575	exchange \$499
IIvx, IICx/IIci to Centris 650	exchange \$249
Performa 630 to PowerMac 6200	exchange \$699



Quadra 950 8/0
\$1349
Brand New! Original Packaging!
1-Year Apple Warranty

FACTORY REFURBISHED
Performa 6200
8/1GB/CD \$899
monitor & keyboard
sold separately

Quadra 840AV 0/0
\$1049
refurbished

\$249
Color StyleWriter 2400
FACTORY REFURBISHED
\$50 Instant Rebate if
purchased with a system!

\$699
IIx17
Apple Color Printer
Brand New

UMAX
UC840
24-Bit Scanners
\$549
NEW
includes:
• Adobe Photoshop LE®
• Wordlink™ OCR Software

\$69
AppleDesign
Powered Speakers

\$279
Apple QuickTake 100

MACINTOSH CPUs

LC550 4/160/CD	\$699.
Performa 578 8/320/CD NEW	\$1199.
Performa 631 8/500/CD	\$729.
Performa 637 8/350/CD	\$699.
LC630/DOS 12/500/CD	\$849.
Performa 6100 8/500/CD	\$849.
Centris 650 4/0	\$649.
Quadra 605 4/160 NEW	\$679.
Quadra 660AV 4/0	\$649.
Quadra 840AV 0/0	\$1049.
Quadra 800 8/0	\$1049.
Quadra 950 8/500 NEW	\$1499.
PowerMac 7200/90 8/500/CD ..	\$1099.
PowerMac 7500/100 16/1G/CD	\$1899.
PowerMac 5200/75LC 8/500/CD	\$1499.
WGS 9150 16/1G/DAT	\$2599.

TOO MANY CPU'S TO LIST - CALL US!

FACTORY REFURBISHED

ACCESSORIES

630 Series Card Specials

DOS Compatibility Card	\$399.
Video Expansion Card	\$149.
TV Tuner Card	\$179.
.....	
Apple OneScanner	\$379.
Apple Color OneScanner	\$479.
HDI External 1.44 for PowerBooks ..	\$149.
IIx NuBus Adapter	\$99.
Bernoulli 90PRO external	\$99.
SyQuest 44 external	\$79.
.....	



Personal LaserWriter LS
NEW \$349
REFURBISHED \$249

*toner sold separately

Performa 578

- 8/320/CD
- complete with ext. keyboard
- BIG software bundle

\$1199 NEW



VIDEO CARDS

Apple 8-bit Card	\$99.
RasterOps 24MX	\$199.
RasterOps PaintBoard Turbo new ..	\$299.
E-Machines DoubleColor SX new ..	\$149.
8100 series AV Card	\$399.
7100 series AV Card	\$399.
6100 series AV Card with adapter ..	\$499.

MONITORS

Apple 13" Trinitron	\$249.
Apple 14" Trinitron	\$299.
Apple 15" MultiScan	\$349.
Apple 21" Color	\$1199.
RasterOps Sweet 16	\$599.
*Hewlett-Packard 17" with card	\$649.
*Hewlett-Packard 20" with card	\$899.
Radius TPD 19" mono	\$399.
Radius TPD 21" mono	\$549.
Radius PrecisionColor/20	\$1199.
Radius Color Display/21	\$1299.
Radius PrecisionColor Pivot	\$549.
RasterOps GDM-1950 20"	\$849.

PRINTERS

Apple StyleWriter 1200	\$179.
Apple Personal LaserWriter LS ..	\$249.
Apple Personal LaserWriter 300	\$299.
Apple Personal LaserWriter NT ..	\$599.
Apple Personal LaserWriter NTR ..	\$699.
Apple LaserWriter II NT	\$699.
Apple LaserWriter II NTx	\$899.
Apple LaserWriter Pro 630	\$1199.
Apple LaserWriter 4/600PS	\$699.
Apple Color Printer NEW	\$699.
HP DeskWriter 310 NEW	\$229.
Hewlett-Packard DeskWriter	\$199.
Hewlett-Packard DeskWriter C	\$219.
Hewlett-Packard DeskWriter 550c	\$249.

Laser toner cartridges sold separately

POWERBOOKS

PowerBook 520 SALE top of page!

PowerBook 170 4/80	\$799.
PowerBook 180 4/80	\$999.
PowerBook 160 4/80	\$699.
PowerBook 150 4/120	\$799.
PowerBook 145 4/80	\$599.
PowerBook 140 4/40	\$499.
DuoDock Plus	\$499.
Duo 230 4/80	\$649.
Duo 250 4/240	\$949.
Duo 280 4/240	\$1149.

FACTORY REFURBISHED

TO PLACE YOUR ORDER CALL

1-800-227-3971

1200 Marshall St. • Shreveport LA 71101



[HTTP://www.shrevesystems.com](http://www.shrevesystems.com)

FAX (318) 424.9771
CUSTOMER SERVICE & ORDER INFO (318) 424.9791
PURCHASING & INFORMATION (318) 424.9791
EMAIL: SSYSTEMS@SOFTDISK.COM

Products are refurbished unless indicated as "new". Prices reflect a 2% cash discount and are subject to change without notice.

CIRCLE 425 ON READER SERVICE CARD



PUSH, PULL OR DRAG IT SALE!

1-800-227-3971

GET A **\$400 MINIMUM TRADE-IN** ON YOUR OLD COLOR MAC SYSTEM
OR **\$400 MINIMUM TRADE-IN** ON YOUR POWERBOOK!

**DESKTOP TRADE-INS:* working units only, minimum configuration 4/80, keyboard, mouse & color monitor

**POWERBOOK TRADE-INS:* working units only, minimum 4/80 configuration

SHREVE
Systems

SHREVE
Systems



Performa 630-635

- factory refurbished
- 25MHz MC68LC040
- 5MB RAM
- 250MB hard drive
- 2X Apple CD300i
- AppleDesign Extended Keyboard
- 14" Performa Plus Display
- Global Village Bronze Faxmodem

\$999.00

- \$400 TRADE-IN

YOUR COST \$599



PowerMac 6100/60
pictured with 14" AV

- factory refurbished
- 60MHz PowerPC™ 601
- 8MB RAM
- 350MB hard drive
- 2X Apple CD300i
- AppleDesign Extended Keyboard
- 14" Performa Plus Display
- Global Village Bronze Faxmodem

\$1199.00

- \$400 TRADE-IN

YOUR COST \$799



Performa 6200/75

- factory refurbished
- 75MHz PowerPC™ 603
- 16MB RAM
- 1GB hard drive
- 4X Apple CD600i
- AppleDesign Extended Keyboard
- 15" Apple MultiScan Display
- Global Village Bronze Faxmodem

\$1299.00

- \$500 TRADE-IN

YOUR COST \$899



PowerMac 5200/75LC

- factory refurbished
- 75MHz PowerPC™ 603
- 8MB RAM
- 500MB hard drive
- 4X Apple CD600i
- AppleDesign Extended Keyboard
- 14" Apple Display
- Global Village Bronze Faxmodem
- Built-in speakers

\$1499.00

- \$400 TRADE-IN

YOUR COST \$1099



PowerBook 520

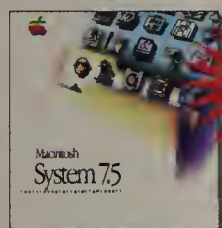
- factory refurbished
- 25MHz MC68LC040
- 4MB RAM
- 240MB hard drive
- 4-bit gray, passive matrix
- maximum RAM: 36MB
- 16-bit stereo sound output
- PRE-LOADED SOFTWARE:**
- System 7.5
- ClarisWorks 3.0

\$949.00

- \$400 TRADE-IN

YOUR COST \$549

Specials Specials Specials



System 7.5
CD-ROM

\$25

\$99

**with trade-in*

Color StyleWriter Pro
REFURBISHED

Trade-in your working
StyleWriter I or II
for this incredible price!
\$249 WITHOUT TRADE-IN

\$429

Apple QuickTake 150
REFURBISHED

RAM O' RAMA



- 1MB 30-PIN 120NS : \$10
- 2MB PAL: \$39

DOS COMPATIBILITY CARD

\$399

FOR POWERMAC OR PERFORMA 6100
Includes 486DX2/66

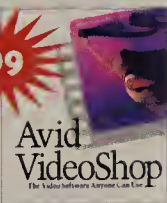
DEMO UNITS

\$449

Personal LaserWriter 320
FACTORY REFURBISHED

**TONER SOLD SEPARATELY*

\$99



Avid VideoShop™ 3.0
CD-ROM

\$199

Great for older Macs!



Hewlett-Packard
DeskWriter
REFURBISHED

\$39

ADB Mouse II
NEW

\$399



PowerBook 150 4/240
REFURBISHED

**WORKING POWERBOOKS WITH MIN. 4/80*

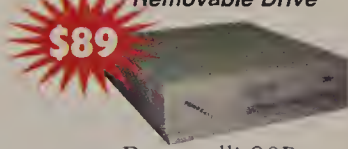
\$549



PowerBook Duo 230
REFURBISHED

\$89

Removable Drive



Bernoulli 90Pro
Transportable
REFURBISHED

\$99



FOCUS
enhancements
L•TV
Portable Pro

YOUR BUSINESS PRESENTATION'S BEST FRIEND!
L•TV Portable Pro is an external scan converter that
allows any Macintosh with a video port to use a standard
TV monitor as a display device (and/or a VCR as a
recording device). It converts the computer image from
an RGB video signal to a standard NTSC signal.



1-800-227-3971

Products are refurbished unless indicated as "new". Prices reflect a 2% cash discount and are subject to change without notice.

CIRCLE 403 ON READER SERVICE CARD

LATEST

Mac

S · A · L · E
INTERNATIONAL

SPECIALS



Mac IIx 5/80
Complete Color System
W/ Apple Color Monitor & Kbd.
➤ **\$529.00** ◀



Mac IIci 4/80
Complete Color System
W/ Apple Color Monitor & Kbd.
➤ **\$599.00** ◀



1710 AV Display
➤ **\$799.00** ◀



Mac LC 4/80
Complete Color System
W/Apple Color Monitor & Kbd
➤ **\$449.00** ◀

*USED/*REFURBISHED*

Desktop CPUs

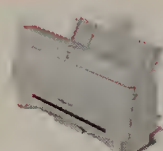
Mac Plus No Kbd or Mouse		\$99.00
Mac SE (800K) 2/80		\$199.00
Mac II 4/0		\$119.00
Mac II 4/40		\$129.00
Mac II CX 4/80		\$229.00
Mac IIX 4/80		\$229.00
Mac IIFX 4/80		\$349.00
Mac LC 2/40		\$199.00
Mac LC II 4/80		\$299.00
Mac LC III 4/120		\$349.00
Mac IISI 5/80		\$299.00
Mac IISI 5/160		\$329.00
Mac IICI 4/80		\$329.00
Mac IIVX 5/80/CD		\$499.00
Mac Portable 2/40		\$299.00
Centris 610 4/500/CD		\$499.00
Centris 650 4/500/CD		\$599.00
Centris 660AV 8/230/CD		\$749.00
Quadra 605 4/160		\$499.00
Quadra 610 4/500/CD		\$525.00
Quadra 630 4/250/CD		\$699.00
Quadra 650 8/500/CD		\$849.00
Quadra 660AV 8/500/CD		\$799.00
Quadra 700 4/230		\$649.00
Quadra 800 8/500/CD		\$899.00
Quadra 950 8/500		\$1199.00
Pwr Mac 6100/60 8/500/CD		\$799.00
Pwr Mac 7100/80 8/500/CD		\$1199.00
Performa 200 4/80		\$349.00
Performa 400 4/80		\$299.00
Performa 410 4/80		\$299.00
Performa 520 5/80/CD		\$649.00
Performa 550 5/80/CD		\$699.00
Performa 600 5/80/CD		\$499.00

(Performa's Are CPU Only)

Printers

Portable StyleWriter	\$149.00
ImageWriter II	\$199.00
Laser Select 300	\$299.00
*Personal Laser 320	\$449.00
LaserWriter 4/600	\$599.00
LaserWriter Pro 630	\$999.00
LaserWriter Pro 810	\$1499.00

Apple InkJet Printers



StyleWriter 1200
with Ink Cartridge & Cable
➤ **\$179.00** ◀

StyleWriter 1500
with Ink Cartridge & Cable
➤ **\$289.00** ◀

* USED *

StyleWriter 2200
➤ **\$199.00** ◀
StyleWriter 2400
➤ **\$199.00** ◀

* NEW *

• Apple CD-300i Plus •

2X Speed Tray Loading
Int. CD-Rom Drive

ONLY - \$59.00

• Personal LaserWriter •
NTR Logic Board

With Trade-In **ONLY \$79.00**

Apple 14" RGB Display	\$429
Apple 16" RGB Display	\$729
Powerbook Ext. 1.4MB Floppy Drive	\$75
Sejin Ext. II Keyboard	\$55
Apple Hi-Density Floppy Disks (10 Pack)	\$5

*USED/*REFURBISHED*

PowerBooks

PB 100 4/40	\$379.00
PB 140 4/80	\$449.00
PB 145 4/80	\$499.00
*PB 150 4/500	\$599.00
PB 170 4/80	\$699.00
PB 160 4/80	\$679.00
PB 165 4/80	\$699.00
PB 165C 4/80	\$899.00
PB 180 4/80	\$799.00
PB 180C 4/120	\$1299.00
*PB 520 4/160	\$799.00
PB 520C 4/160	\$999.00
PB 540 4/120	\$1049.00
Duo 210 4/80	\$449.00
Duo 230 4/80	\$499.00
Duo 250 4/200	\$649.00
Duo 280 4/240	\$899.00
Duo 280C 4/320	\$1099.00
Duo MiniDock	\$199.00
Duo Dock	\$299.00
Duo Floppy Adapter	\$59.00
Duo Battery Recharger	\$35.00
PB Battery Recharger	\$35.00
PB Int. Fax/Data Mdm	\$25.00
PB 14.4 Express Mdm	\$79.00
PB AC Adapters	\$39.00

Monitors

Apple 13" RGB Display	\$250.00
Apple 14" Color Display	\$350.00
Apple 16" RGB Display	\$649.00
Apple 17" MultiScan	\$799.00
Apple Performa Display	\$179.00
*Performa Plus Display	\$250.00
*Apple 14" MultiScan	\$275.00
Apple Two Page Mono	\$479.00

Accessories

Apple OneScanner	\$249.00
Apple Ext. 1.4MB Floppy	\$85.00
Apple PowerCD Drive (3-in-1 CD Drive)	\$99.00
Apple Ext. II Keyboard	\$75.00
Din 8 Cable	\$8.00
Absolute Battery with Recharger Combo (140-180C)	\$69.00

We Now Feature A Huge Inventory Of Parts For All Apple Product And Also Offer Extended Warranties

Visit Our Web Site At: www.getnet.com/macsale Or E-Mail Us At: macsale@getnet.com

Limited Quantities/Prices subject to change
Prices represent a Discount - off Full Price
Returns at discretion of Mgmt/15% Restocking fee

1-800-729-7031

1150 W. Alameda Dr, Suite 1 & 2
Tempe, AZ 85282
(602) 858-0900 / Fax: (602) 858-0811

WE WANT TO BUY YOUR NEW/USED MAC EQUIPMENT

CIRCLE 401 ON READER SERVICE CARD

Ad # MW0896 c Personal & Business **Leasing** by PFO CAPITAL
Call (818) 787-1423
Sales (818) 787-1054
Export (818) 786-8150

Universal Computers
800-621-1963

E-Mail: csales@pacificnet.net
FAX (818) 787-2111
Call us for: **IBM COMPAQ TOSHIBA**
All prices reflect C.O.D. orders only & are subject to change without notice!

Power Macs	
New WGS 8550/132 & 7250/120	CALL
9500/150 16-2GB CD	\$4095
8500/150 16-2GB CD	\$4295
8500/132 16-1GB CD	\$3445
7200/120 16-1GB CD	\$2095
7200/100 8-800 CD	CALL
9500/132 16-1GB CD	\$3195
8500/120 16-1GB CD	\$2945
7500/100 16-1GB CD	\$1895
7200/75 8-500 CD	\$925
6100/66 16-500 CD, DOS	\$1095
16/32/64MB DIMM & SIMM	199/399/795

PowerBooks	
5300ce 32-1GB	\$3595
5300cs/5300c 16-750	\$2395/2895
5300/5300cs 8-500	\$1195/1795
540C 12-320 Modem	\$2395
520/520C 4-240	\$795/1095
520C 12-320 Modem	\$1495*
190/190cs 8-500	\$1955/1445
150 4-120/8-250	\$640/795
DUO 280/280C	\$995/1395
DUO 2300C/Duo Dock/Mini Dock	\$2795/Call.
DUO 280C 12-320 Modem	\$1995
4/8/16/32 Mem.	\$85/229/429/975

Performa	
6320/120 8/1.2GB CD, 14.4 Fax/Modem	CALL
5300/100 8/1.2GB CD, 14.4 Fax/Modem	\$1799
6300 CD 16/1GB CD (15" Monitor, Keyboard, Modem)	\$1995
6220 CD 16/1GB CD (TV, Keyboard, Modem)	\$1095
6200 CD 8/800 CD (15" Monitor, Keyboard)	\$1295
6116 CD 8/700 CD (14" Monitor, Keyboard)	\$995
5200 CD 8/800 CD (Keyboard)	\$1295
630 CD 8/350 CD	\$688
410 4/80	\$335
Apple TV Card (for Performa models)	\$229
Apple DOS Card (for Performa models & 6100)	\$239


Monitors/Printers	
APPLE	
Multiple Scan 15/15*	\$345/269
" 1705/1710AV	\$745/995
Multiple Scan 20	\$1699
Color LW. 12/600 PS	\$5895
LW.360/LW.16-600	\$1149/2050
LW. 4/600 PS	\$789
StyleWriter 1500/2500	\$285/365
StyleWriter 1200/2400	\$185/299
SONY	
15SX1 15" Color, 0.25 dpi	\$399
17SF2 17" Color, 0.25 dpi	\$845
20SF2 20" 1600x1200	\$1675

radius Liquidation	
Proof Positive Color Printer	\$3150
21" TXL /PressView 21	\$1195/1395
IntelliColor 20e 20" Trinitron	\$1595
SuperMac Color 21" P.#. STD 9771	\$1145
SuperMac Multimode 17"/17T	\$1145
*Precision Color Pivot/Mono	\$349/199
Radius Mono 20"/21"	\$299/399
Le Mans GT/Precision 24X	\$545/445
Thunder IVGX 1152/1360/1600	\$545/695/895
Thunder IIGX 1152/1360/1600	\$400/600/700
Rocket Share V.1.1+SCSI-2 Rocket Acry.	\$99
Spectrum 8 Series III/VideoSpigot Si/Pivot Intr.	CALL

HEWLETT PACKARD Printers & Scanners	
LaserJet 4M+	\$1449
600dpi, 6MB RAM, 12PPM, Ethernet	
1200CPS*/4M+*/4MV*	\$949/1299/2395
New DeskJet/DeskWriter 680C	\$299
LaserJet 5M/5MP/Cir.5M	\$1699/969/6799
DeskJet 1600CM/855CXi	\$1795/949
PaintJetXL300PS Prints 11x17 Tabloid size	\$1195
DeskWriter 660C/600/540	\$275/199/179
ScanJet 4C/4P/4S/4SI	\$895/479/319/2200
LaserJet 5SIMX/4SIMX/4MV	\$3795/2749/2645
HP Plotters & Accessories & 220Volt Products	Call

Power Computing	
PowerCurve 601/120	\$1775
PowerWave 604/120	\$2449
PowerWave 604/132	\$3450
PowerWave 604/150	CALL
PowerCenter 604/120/150	CALL
PowerTower 604/180	CALL
NEC	
XV 15+ 15", 0.28dpi	\$485
XV 17+ 17", 0.28dpi	\$799
ViewSonic	
15G, 15" Color 0.28dpi	\$395
17GA 15" 0.27dpi W/Sound	\$695
20G 20" 0.25dpi W/Sound	\$1795

"A Macworld never goes by without me checking to compare prices. I always look to see if what I need is there!"
—Owner, Computer Consultants



SONY MONITORS (R)
17" SONY(R) PO'S \$449
20" SONY(R) AMEX \$785
EXT. RAID SYSTEMS
8.6G RAID F/W \$1895
2-XP34300W's & ENC
POWERBOOKS/DUOS
DUO 270C 4/240 (D) \$995
PBOOK 5300C 8/500 \$2399
MEMORY
16MB SIMM 72 Pin 70ns \$130
16MB DIMM 60ns \$155
Computer Guys 603-659-2912 FAX 659-5722
35 Mitchell Road Lee, NH 03824 Div. of ABSC PRICES SHOW CASH DISC. & CHANGE W/D NOTICE. 15% RESTOCK
CIRCLE 438 ON READER SERVICE CARD

STOP SCSI Problems
SCSIVue™ Active Terminator From: \$59
Benefits:
• Improves SCSI Bus Performance
• Less Errors; More Reliable Data Transfer
• Diagnoses Problems • Analyzes Signal Quality
Features:
• Active Regulation • Fast 50 & Fast Wide 68
• Status Indicators • Gold Contacts
SCSIVue™ Gold Diagnostic Cables
Benefits:
• No Loss Of Important Data
• Faster Performance
• Test Cable Integrity
Features:
• Diagnostic Indicators • Large Ferrite Filters
• Triple Shielding (Unique Design)
• Double Gold 20u" Plated Connectors
• Extra Heavy 26 Gauge Wire • 40 Styles in Stock
From: \$39
COMPATIBLE

Active Buyers turn to the

Over 590,000 Macworld subscribers turn to the Macworld Shopper monthly. 531,250 of these buyers have taken action as a result of seeing an ad in the Macworld Shopper.
Macworld Shopper Purchase Study, 1995

USED COMPUTERS
The Computer Exchange
"We match buyers and sellers of used MACS nationwide."
Classic to PowerPC
Call for More Info
800-304-4639
404-898-0700 www.compexch.com
205 Armour Dr. NE, Atlanta, GA 30324
CIRCLE 460 ON READER SERVICE CARD

SCSIVue™ Teflon Internal Cables From: \$39
Benefits:
• Less Errors, Ultimate Performance
• Silver Wire Improves Signal Quality
Features:
• Perfect 90 Ohm Impedance Match • Custom in 1 Day
• Triple Pronged Connector With Gold contacts Silver Wire
SCSIVue™ 2-1 Active SCSI Switch
Benefits:
• Share Devices Between 2 Computers
• Up to 14 Devices to 1 Computer
Features:
• 2-1 Active Digital Switch/Repeater
• Regenerates SCSI Signal for Long Runs
Granite The SCSI Solution Company
Ph: 510-471-6442 Fax 510-471-6267
3101 Whipple Rd. Union City, CA 94587
Web address: www.scsipro.com
CIRCLE 408 ON READER SERVICE CARD

PROGRAMMING & LANGUAGES

UPGRADES & MEMORY



LS FORTRAN

- ANSI standard FORTRAN 77
- VAX & Cray extensions
- Extensive code optimizations
- Background execution
- User-friendly Mac interface
- Native PowerMac & 68K

1-800-252-6479

Fortner Research LLC
(703) 478-0181 • Fax: (703) 689-9593
info@fortner.com
Web: <http://www.fortner.com>

CIRCLE 441 ON READER SERVICE CARD

Visualize with Transform

- ✓ Pseudocolor Images
- ✓ Contour Plots
- ✓ Color Surface Plots
- ✓ Vector Plots

...from your 2D data

1-800-252-6479

Fortner Research LLC
(703) 478-0181 • Fax: (703) 689-9593
info@fortner.com
Web: <http://www.fortner.com>

CIRCLE 437 ON READER SERVICE CARD

ACCELERATORS

MEMORY and CACHE Cards



MicroMac Technology



Pacific MAC 1-800-622-6261

206-935-6100 • fax 206-935-7937
e-mail PACIFIMAC@aol.com
<http://www.pacificmac.com>

CIRCLE 438 ON READER SERVICE CARD

WANTED: USED MEMORY

► **TOP \$\$\$ PAID** ◀

Any Quantity
Trade Ins Welcome
New & Used SIMMS Available

MAC Solutions
(800)80-WE-BUY

TEL: (310) 394-0001 FAX: (310) 394-7744

CIRCLE 473 ON READER SERVICE CARD

Memory Wanted

WE BUY NEW OR USED

SIMMS

256K, 512K, 1MB, 2MB,
4MB, 8MB, 16MB, 32MB.

30 Pin, 64 Pin or 72 Pin.

POWERBOOK 2MB - 28MB



We Buy In Quantity. Call Us or Send Fax.
INNOVATIVE MICRO PRODUCTS, INC.
7631 Leesburg Pike, Suite A
Falls Church, Virginia 22043
Tel.: 703-848-0711 Fax: 703-848-0712

CIRCLE 462 ON READER SERVICE CARD



• Accelerators • Memory •
• Cache Cards •

Visit our web site!

www.dvchardware.com

800-889-5137

BUS. 417-889-5113 • FAX 417-889-7980 • sales@dvchardware.com

CIRCLE 426 ON READER SERVICE CARD

PC-Cards/Memory/Peripherals/Networking

FASTcomm PowerBook PC-Cards:

EtherNet Combo (10BT & BNC) PC-Card	\$105
28.8Kbps Data/Fax Modem incl. Software	\$225
PRO 28.8Kbps D/F Modem & EtherNet 10BT	\$355

FASTcomm Networking Products:

Apple Mini-Tranceivers AAUI-BNC or 10BT	\$25
5 & 9 -Port Mini-Fashion 10BT Hub	\$79/\$99
14 & 18 -Port 10BaseT PRO-Hub	\$189/\$255

MEMORY.....CALL

SIMMS•DIMMS•VRAM•CACHE

KEYBOARDS: Index extended
softtouch avail. in 14 languages.

MACS & PERIPHERALS:

All custom configured & installed
Call for bid request & price list

European standards & voltage available • Dealer inquiries welcome.

1-800-950-8411 Memory Technologies Texas Inc.

MasterCard & Visa Accepted.
Corp./Educational/Gov. POs
accepted upon approval

Austin • Texas • Email: memorytech@earthlink.net
Fax: 512/451-3323, International: 512/451-2600
Website: <http://www.earthlink.net/~memorytech>

CIRCLE 445 ON READER SERVICE CARD

"If we had to place
just one ad,
it would be in
Macworld Shopper.

**It just plain works better
for us than the others ...**

**We know,
we've tried them."**

—David Ash
Mac Solutions



"I bought a
Personal LaserWriter
from Shreve Systems,
a Macworld Shopper advertiser,
and got a great deal
and an excellent product.
They're better than
local computer stores!"

—Technical writer,
Shopping Center Developers



MEMORY

**Guaranteed Lowest Prices
Life Time Warranty**

- 30 Pin SIMMS
- 1 MB—16 MB
- 72 Pin SIMMS
- 1 MB—64 MB
- 168 Pin DIMM
- 4 MB—64 MB
- All Power Books
- All Printers
- VRAM, DIMM, CACHE

WE BUY MEMORY

We accept P.O.s from government, schools & qualified firms.

Eritech International
1-800-808-6242

Ph: 818-244-6242

Fax: 818-502-5059

CIRCLE 469 ON READER SERVICE CARD

**OUR GOAL IS TO BEAT OUR COMPETITOR'S PRICES
CALL US LAST FOR A SPECIAL DISCOUNT!**

MEMORY MEMORY

30 PIN SIMMS

1MB
2MB
4MB

72 PIN SIMMS

4MB 32MB
8MB 64MB
16MB

168 PIN DIMMS

4MB 32MB
8MB 64MB
16MB 128MB

VIDEO RAM

256K SIMMS
512K SIMMS
1&2MB DIMMS

CACHE CARD

256K SIMMS/DIMMS
512K SIMMS/DIMMS

POWERBOOK MEMORY

ALL SERIES AVAILABLE

PRINTER MEMORY

MAJOR BRANDS AVAILABLE

LIFETIME WARRANTY ON MEMORIES

ACCELERATORS

DAYSTAR, SONNET, NEWER, MICROMAC

1-800-427-2021

HBR ENTERPRISES

11628 SANTA MONICA BLVD. #201 LA. CA. 90025

M-F 7:30AM - 6PM SAT 10AM - 3PM

FAX 1-310-826-2573

INTERNATIONAL 1-310-826-3363

RETURN ITEMS ARE SUBJECT TO APPROVAL AND RESTOCKING FEE. PRICES SUBJECT TO CHANGE

TERMS: VISA, MC., AMX., DISCOVER,

PRE-PAID, C.O.D & APPROVED P.O.s

<http://www.dnm.com/hbr/>

CIRCLE 452 ON READER SERVICE CARD

MEMORY

LIFETIME GUARANTEE

PC & Mac Memory in stock at Lowest Prices



SIMMS
DIMMS
SIPs
DIPs
ZIPs
VRAM
CACHE

University, Government & Corporate P.O.s with Approved Credit

CPUs
PowerBook Memory
Printer Memory
EDO Memory



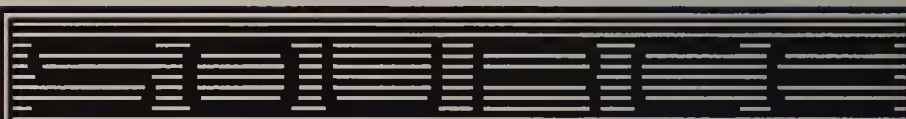
DMS

Data Memory Systems, Inc.
24 Keewaydin Dr. Salem, NH 03079
Tel: 603-898-7750 / Fax 603-898-6585
Web Site: www.datamem.com/datamem
Email: datamem@aol.com

800-662-7466

Memory Upgrade Specialists Since 1987

CIRCLE 447 ON READER SERVICE CARD



COMPUTING MEMORY

SIMMS	DIMMs
4MB 72/70.....\$39	8 MB 168/70.....\$89
8MB 72/70.....\$79	16 MB 168/70.....\$159
16MB 72/70.....\$159	32 MB 168/70.....\$299
32MB 72/70.....\$299	64 MB 168/70.....\$699

PB RAM / ALL MODELS!!!

4 - 64 MB.....\$55CALL

L2 CACHE

256k - 61XX/71XX/81XX.....\$89

256k - 72XX/75XX/85XX.....\$115

512k - 72XX/75XX/85XX.....\$155

VRAM

4MB DIMM - 72XX/75XX/85XX.....\$55

512k SIMM - 61XX/71XX/81XX.....\$29

- WE BUY MEMORY CALL US LAST
- SAME DAY SHIPPING BY 5 PM EST
- NO CREDIT CARD SURCHARGES
- GOVT & EDU POs WELCOME

**PRICES SUBJECT TO CHANGE
WITHOUT NOTICE**

LIFETIME WARRANTY



800/900-4599

Voice 954/725-9777 • Fax 954/725-9977

<http://www.sourcecomp.com>



CALL OR LOG ON FOR LATEST PRICING!



CIRCLE 409 ON READER SERVICE CARD



MAC Xtra
DISCOUNTS

CALL MACXTRA NOW! 1-800-553-4230

FAX your order: 206-746-5324

International calls: 206-746-3803



MAC Xtra
DISCOUNTS

PUZZLED BY HOW TO ENERGIZE YOUR MAC?

MEMORY!

LIFETIME WARRANTY

STANDARD 30-PIN SIMMS

FOR PLUS, SE, SE 30,
CLASSIC/II/COLOR,
LC/LCII, PERF. 200/400-430/600,
Q 900/950, MAC II, IIX, IICX,
IISI, IICI, IIFX, IIVX, IIVI.

1MB 100NS	\$24
1MB 80/70NS	20/33
2MB 80/70NS	36/40
4MB 80NS/70NS	71/75 ✓
8MB 70NS	270
16MB 70NS	455

4mb PAL SIMMs for II/IIx

4MB 80NS	\$134
----------	-------

64-pin SIMMs for IIx

1MB 80NS	\$26
4MB 70NS	154
8MB 70NS	303 ✓
16MB 70NS	520

PC SIMMS

1MB 70NS	\$29
4MB 70NS	130

72-PIN SIMMS

FOR Q 605/630, 610, 650, 700, 800/840AV,
LCIII/475/630, PERF. 450-560/575 & 6115CD,
PMAC 61/71/8100,
WS 80/60/95/6150/81/ 9150.

4MB 70NS/60NS	\$43/45
8MB 70NS/60NS	66/68
16MB 70NS/60NS	169/171
32MB 60NS	306

PC SIMMS (72-PIN)

4MB 70NS	\$87
8MB 70NS	187
16MB 70NS	300
32MB 70NS	875

168-PIN DIMMS

FOR PM 9500, 8500, 7500, 7200

4MB	\$124
8MB	95
16MB	165 ✓
32MB	353
64MB	684

ALL 60NS!

POWERBOOK SERIES

PB5300

8MB	\$168	12MB	268
16MB	325 ✓	32MB	610

PB2300

4MB	\$157	8MB	283
16MB	490	20MB	550
32MB	870	36MB	795

PB190 SERIES

4MB	\$125	8MB	166
12MB	299	16MB	445
32MB	835	ALL 70NS!	

PB500 SERIES

4MB	\$97	8MB	169 ✓
16MB	330	32MB	603

PB DUO 210/230

4MB	\$157	8MB	259
12MB	443	14MB	453
20MB	777	28MB	897

FPU'S/MATH COPROCESSOR/ VRAM/CACHE

CENTRIS FPU 25MHZ	\$186
FPU 33MHZ DUO/P600	51
FPU COL. CLASSIC 16MHz	42
LC575 33MHz FPU	238
LCIII FPU 25 MHz	48

POWERMAC 6100, 7100, 8100 VRAM/CACHE

256K 80NS VRAM	\$17
512K VRAM	22
256K CACHE	70
512K CACHE	279
1MB CACHE	789

POWERMAC 72/75/85/9500 VRAM/CACHE

1MB VRAM 72/75/8500	\$55
2MB VRAM 9500	227
256K CACHE DIMM	86
512K CACHE DIMM	148

POWERBOOK ACCESSORIES

BATTERIES

V5T PB5300 BATTERY,	
CHARGER, AC ADAPTER	\$319
V5T PB2300 INT. TYPE III	97
V5T PB500 INT. BATTERY	125

HARD DRIVES

V5T EXP. BAY HARD DRIVE	
540/810MB/1.2GB	\$482/615/769

MODEMS

GLOBAL VILLAGE POWERPORT	
PLATINUM 28.8 V.34	\$337
SUPRA 14.4/28.8 PB	163/187
MEGAHERTZ CRUISE CD 14.4	135

MEDIA

Syquest

EZ135MB SYQUEST CART.	\$19
EZ135MB SYQUEST CART. 10 PK.	180

THE ORIGINAL SYQUEST CARTRIDGE!

	1-4	5-9	10+
44MB 5.25"	\$41	\$40	\$39
88MB 5.25"	\$43	\$42	\$41
200MB 5.25"	\$63		\$62
270MB 3.5"	\$49	\$48	\$47
105MB 3.5"	\$52		\$51

Sony

RECORDABLE CDROM 640MB/10 PK.	8/73
3.5" 230MB OPTICAL/MAC	\$20/22
650MB OPTICAL	52
2.3GB/2.6GB OPTICAL	86/86

Verbatim

3.5" 128MB OPTICAL	\$21
3.5" 1230MB OPTICAL	28
RECORDABLE CDROM 640MB/10PK	8.50/83
25DD 3 1/2 10PK DISK	7.50
4MM/60M DATA CART.	7
DATA 4MM DC 295 FT.	9
DATA 8MM DC 367 FT.	7
DC 2120 120MB QIC80	12

Iomega

ZIP 100 MB CART.	\$19.50
ZIP 100 MB CART. 3PK/10PK	45/139
JAZ 1GB CART/5 PK.	123/490
JAZ 540MB CART/5 PK	69/294

SCANNERS & PRINTERS

Visioneer

PAPERPORT VX	\$295
--------------	-------

Umax

POWERLOOK II	\$1988
VISTA 5-12	
PRO+/LE+	908/808
VISTA 5-6 E PRO	608

Nikon

COOLSCAN II EXTERNAL	\$1349
SUPER COOLSCAN	1999

Agfa

STUDIOSCAN IISI	\$795
ARCUS II	1941

Polaroid 5PRINTSCAN	\$1555
---------------------	--------

Apple

COLOR STYLEWRITER 2500	\$375
LW 4/600	895
LW 16/600	2249

Hewlett Packard

LASERJET 5M.	\$1785
DESKWRITER 660C	289

Epson

STYLUS COLOR PRO XL PRINTER	\$1795
PRO XL BLACK/COLOR CART.	19/35

Printer Supplies

HP DESKJET/WRITER COLOR CART.	\$29
HP DESKJET/WRITER BLACK CART	26.50
HP LASERWRITER 4V/4MV TONER	152
HP LASERWRITER 4/4M TONER	116
APPLE LW 12/600 BLACK TONER	95
APPLE LW 12/600 COLOR TONER	
(CYAN, MAGENTA OR YELLOW)	110 (EACH)
APPLE COLOR STYLEWRITER HIGH	
PERFORMANCE BLACK CART.	29
APPLE COLOR STYLEWRITER	
2400 BLACK & COLOR CART.	44

MODEMS

Global Village

TELEPORT PLAT. 28.8 V.34	\$203
POWERPORT1XX PLAT.28.8 V.34	337
POWERPORT PLAT. PC CARD 28.8	349
POWERPORT PLAT. PC CARD PRO	519

Supra

EXPRESS 28.8 EXT V.34	\$159
14.4 EXPRESS	98
28.8 PB FAX/MODEM	187
28.8 V.34 S/R FAX MOD.	205

Motorola

ISDN BITSURFER PRO	\$365
--------------------	-------

US Robotics

28.8 V.34 INTERNET BNDL	\$193
28.8 V.34 SPRT5TR W/VOICE	225

Zoom

2400 BP5	\$65	V.FAST 28.8	189
VFX 14.4 V.32BI5 5/R FAX	169		
VFXV 14.4 V.32BI5 W/VOICE	148		
14.4 EXTERNAL 5/R V.42	79		

MONITORS & VIDEO

Monitors

APPLEVISION 1710AV	\$1069
NEC MULTISYNC XV15+/17+	523/889
NEC MULTISYNC XE15/XE17/XE21	620/1099/1845
NEC MULTISYNC XP17/XP21	1135/2140

WE ALSO CARRY SONY, NSA HITACHI, RADIUS MONITORS

Video

PREC. COL. PRO 24X/XK NUBU5	\$1159/825
RADIUS THUNDER IV	
CX-1152/1360/1600	1635/1875/2040
RADIUS THUNDER 24 GT	490
ATI XCLAIM 4MB/2MB CARD	489/365
NUMBER NINE IMAGINE	
128 PCI 4MB/8MB CARD	869/1149
IMSI TWIN TURBO 120 4MB/2MB CD	555/362

DRIVES

Apple Ext. Drives

850MB	\$339
1.2GB	435
2.0GB	765

Quantum

INT AND EXT DRIVES	
1.2GBEXT. FIREBALL	359
850MB EXT. TRAILBLAZER	279
ATLAS 4.3GB 8.6MN	1079

Rumi Syquest

200MB SYQUEST W/CART	\$479
270MB SYQUEST W/CART	479

NEC

6XE MULTI-SPINCD-ROM DR.	\$515
4XC 7-CHR	
CD-ROM DRIVE	359
4X 4V INT.	\$1375
CD-ROM DRIVE	176

ACCELERATORS

Daystar

POWERPRO 601 80MHZ	
W/RAM CACHE	\$1441
POWERPRO 601 100MHZ	
W/CACHE	1231
TURBO 040 40MHZ	
W/CACHE	679
TURBO 040I 33MHZ	
W/CACHE NO FPU	605
TURBO 601 66MHZ	
FOR IICI, IISI W/ADAPTER	851
TURBO 601 66MHZ FOR IIVX, IIVI, P600	851
TURBO 601 100MHZ	
FOR IICI, IISI W/ADPTR	1165
TURBO 601 100MHZ	
FOR IIVX, IIVI, P600	1165
POWERCARD 601 100MHZ	946

POLICIES

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

MAC XTRA 1075 BELLEVUE WAY NE, STE. 114 BELLEVUE WA 98004

OVERNIGHT DEL. \$7.50 AND UP, UPS GROUND \$6 AND UP

RETURNS SUBJECT TO APPROVAL & RESTOCKING FEE

PHONE (206) 746-3803 FAX (206) 746-5324

WE ACCEPT P.O.'S FROM FORTUNE 500 AND EDUCATIONAL INSTITUTIONS

OFFICE HOURS: M-F, 7AM TO 6PM; SAT., 9AM TO 4PM, PST

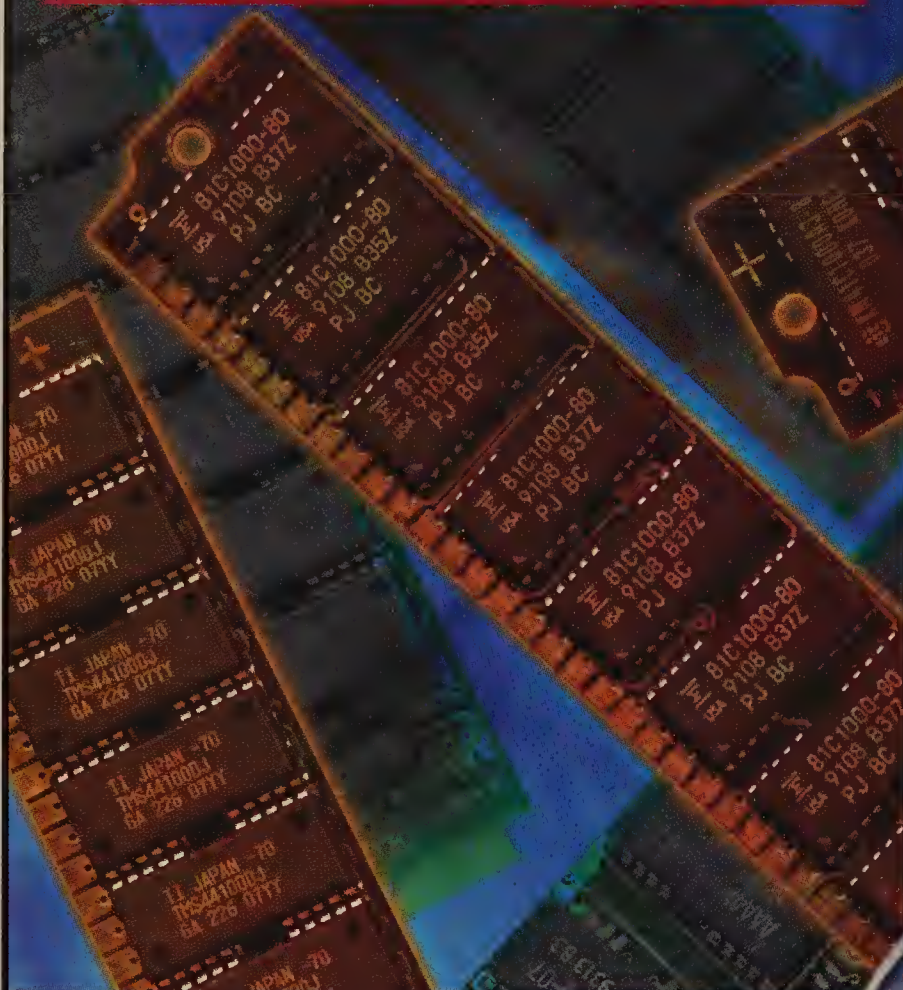
WD 0896

CIRCLE 561 ON READER SERVICE CARD

PERIPHERAL

PERIPHERAL OUTLET, Inc.

800/259-6565



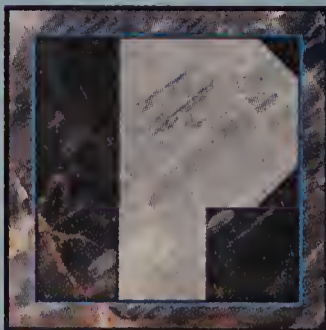
50 MHz Accelerator \$179



Speed increases of up to 400% with the DiiMOCache 50MHz 68030 Accelerator. The DiiMO outperforms not only DayStar's PowerCache 50MHz but also most of the 68040 25MHz accelerators. The DiiMOCache 50MHz runs on the LC, LCII, LCIII, II, IIx, IIcx, IIci, IIvi, IIsi, SE/30, and the Performa 600 and Performa 400 series. Call for adapter prices.

68040 Processor w/FPU \$179

25MHz\$179.00
33MHz\$239.00
40MHzCALL



PERIPHERAL OUTLET, Inc.

327 East 14th, PO Box 2329 • Ada, Oklahoma 74820
405/332-6581 FAX 405/436-2245 AppleLink-PERIPHERAL
Internet: sales@peripheral.com

HOURS: Monday-Thursday 6AM-7PM CST, Friday 6AM-6PM

We accept Visa/MC/Amex/Discover, and COD Cashiers check upon approval. Educational, Government, and Fortune 500 P/Os accepted upon approval.

Due to volatility in the market all prices and availability are subject to change without notice.

PowerBook 5300/190 Memory

4 Megabyte upgrade.....135.00
8 Megabyte upgrade.....CALL
16 Megabyte upgrade.....419.00
32 Megabyte upgrade.....835.00
40 Megabyte upgrade.....CALL
48 Megabyte upgrade.....CALL
56 Megabyte upgrade.....CALL

PowerBook 500-series Memory

4 Megabyte upgrade.....145.00
8 Megabyte upgrade.....269.00
16 Megabyte upgrade.....449.00
24 Megabyte upgrade.....675.00
32 Megabyte upgrade.....897.00

All PowerBook memory upgrades include necessary tools, static protection, and instructions for safe installation.

Duo-series Memory

4/8 Megabyte upgrade.....145/269
12/14 Megabyte upgrade.....425/525
20/28 Megabyte upgrade.....699/CALL

Video RAM

1 MB VRAM for 7200/7500/8500.....59.00
2 MB VRAM for ATI Video Card.....169.00
256K/512K VRAM 80ns.....21/25

Cache Cards, Etc.

Cache DIMMs for 7200/7500/8500.....CALL
256K-1 MB Cache Cards for 6100/7100/8100.....CALL

PowerBook 100-series Memory

2, 4, 6, 8, and 10 Megabyte Upgrades

Call for Best Prices!

168 pin DIMMs for PCI Macs

8 Megabyte
16 Megabyte
32 Megabyte
64 Megabyte
128 Megabyte

*Prices Changing —
Call for the
Best Prices!*

72 pin Memory for the Mac

80ns 70ns 60ns
4 Megabyte
8 Megabyte
16 MB-Non Composite
32 MB-Non Composite

*Prices Changing —
Call for the
Best Prices!*

Standard 30 pin SIMMs

1, 2, 4, 8, and 16 Megabyte SIMMs

Prices Changing —Call for Best Prices!

68882 Math Coprocessors

68882 25 MHz FPU.....49.00
68882 33 MHz FPU.....59.00
68882 50 MHz FPU.....99.00

Newton Upgrade Products

Static RAM Storage Cards

512K/1MB/2MB.....89/124/235

Flash Storage Cards

2MB/4MB.....99/159

8MB/16MB/20MB/24MB.....254/565/735/868

Miscellaneous

68040 processors with FPU.....from 179

LaserWriter 320 2,4,6 MB upgrades.....CALL

LaserWriter Pro 810 4MB/8MB upgrades.....CALL

T.I. MicroLaser 1 MB.....39.00

Hewlett Packard printers.....CALL

68851 16MHz PMMU.....89.00

if requested, MODE 32 software included free w/PMMU

Mac Portable 3-7 MB Cards.....CALL

TOLL FREE TECH SUPPORT

Our installation instructions and tech support are the best in the industry!

LIFETIME WARRANTY on all memory products.

Order by 6:00 PM CST for same day shipping.*

Overnight delivery from \$8.00!

*some restrictions apply



CIRCLE 454 ON READER SERVICE CARD

NEW MEMORY NOW AVAILABLE

DIMMs	8mb	\$ 85
	16mb	\$ 160
	32mb	\$ 315

SIMMs	72 PIN	4mb	\$ 35
		8mb	\$ 75
		16mb	\$ 147
		32mb	\$ 319

SIMMs	30 PIN	1mb	\$ 14
		2mb	\$ 30
		4mb	\$ 55

PBOOK	500/5300	16mb	\$ 295
		24mb	\$ 405
		32mb	\$ 565

NOTE: All prices are subject to change. Limited to stock on hand



1416 Wilshire, Santa Monica, CA 90403
TEL: (310) 394-0001 FAX: (310) 394-7744

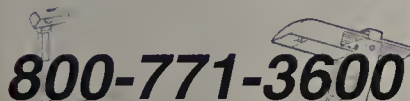
(800)80-WE-BUY

TRADE-INS WELCOME. WE BUY MACS & MEMORY.

CIRCLE 410 ON READER SERVICE CARD

Turn Night to Light!

Shed light on your
Powerbook or Newton
in dim or dark places



800-771-3600

<http://world.std.com/~asf1>

Volume Pricing & Specs

Fax: 800-625-6897 • 516-868-6897
Tel: 800-936-3638 • 516-868-3638

ASF ASF Assoc. Ltd.
The Personal Portable Lighting Experts
Box 625, Merrick, NY 11566

CIRCLE 417 ON READER SERVICE CARD

Dynamic Engineering

**PB Accelerators
Portable Upgrades**

MEMORY, HDD, FAX, BATTERY
POWERBOOK 100 BATTERIES

435 Park Dr., Ben Lomond, Ca. 95005
Fax 408-336-3840
<http://www.dyneng.com>
email sales@dyneng.com

DSCVR VISA/MC AmEx
(408) 336-8891

CIRCLE 411 ON READER SERVICE CARD

BookEndz™ PowerBook™ Docking Stations

Models for 5300/190, 520/540, & 100 series

- Convert your PB to a complete desktop system
- Dock/undock in seconds
- Low cost
- Eliminates cable confusion
- Supports all ports
- Assembles in minutes
- Adds only 3" to rear of PB when docked

- Free NoteBook Enhancements Catalog
- Foreign telephone adaptors
- Monitor stands
- PocketNet 16' retractable modem cords



Orders: 800-682-4987

Pilot Technologies, Inc., Minneapolis MN Tel: (612) 828-6002 Fax: (612) 828-6806
URL <http://www.pilot-tech.com/> Email Address: pilottech@aol.com

CIRCLE 419 ON READER SERVICE CARD

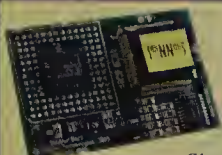
BEST BUYS TO RUN YOUR MAC FASTER



**Accelerate Your
Mac IICI, IISI
& LC/LC II to
68040 Speed**

Sonnet Presto 040 80/40 MHz accelerators increase Mac IICI, IISI series performance to 600%. Run an LC/LC II 2.5x as fast with the Presto 040 LC 50/25 MHz card. System 7.5 compatible. Uses the PDS slot.

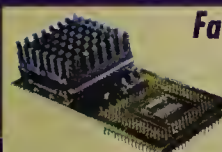
		w/FPU
Presto 040 LC, LC II	\$199	\$299
Presto Mac IICI, IISI*	\$299	\$399
Presto with 128K cache	\$399	\$499
*Adapter req'd	\$49	



**A Fast 68030
Gives Your Older
Mac New Life**

Give your older Mac more muscle. All Sonnet Allegros come equipped with a speedy 68030. Some units also have an FPU, cache and/or additional SIMM slots.

33 MHz SE	4x30pin SIMM slots	\$189
33 MHz Mac II	Supports RAM Doubler	\$189
33 MHz Mac IIX	Plugs into CPU socket	\$189
33 MHz LC II	Incl. FPU & 16K cache	\$149
33 MHz Color Classic	Incl. FPU & 16K cache	\$149
NuBus Adapter 660Av/Mac IISI		\$99/\$149



**Fastest Quadra
Ever! Plug in a
100/50 MHz
68040 Board**

Double speed with full compatibility. Works in Quadra/Centris 610, 650, 660AV, 700, 900. 80/40MHz unit for Centris 610.

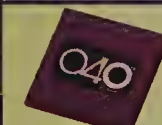
80/40 MHz	\$199	w/FPU	\$299
100/50 MHz	\$399	w/FPU	\$499

Power Mac Cache/FPU



Performa 5400 & 5260 256K DIMM...^{\$CALL}
PM 6100-8500 256K...^{\$89} 512K...^{\$135}

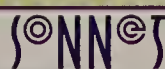
Power FPU software will run 68K
FPU applications on Power PC FPU...^{\$75}



**Math Coprocessors
for 68040 Macs**

If you use graphics, CAD, Excel, or rendering programs, you will speed through applications like never before.

25 MHz Q605, C/Q610, C650, LC475, P47X	\$149*
33 MHz LC575, LC630, P57X, P63X	\$199*
33 MHz PB190, PB52X, PB54X, Duo 280	\$299
* with LC040 exchange. 68882 upgrades from \$49.	



TECHNOLOGIES, INC., 18004 Sky Park Circle
Irvine, California 92714, 714-261-2800 Fax 261-2461

Gov't./Corp./Education P.O.
E-Mail: Sales@Sonnettech.com

800-786-6260

CIRCLE 463 ON READER SERVICE CARD

Kablit™ Security

NOW!

STOP COMPUTER THEFT!

IN THE OFFICE — ON THE ROAD

- Secure computer or Powerbook™ to desk, table, etc.
- Protect data
- Lifetime warranty

MacKablit™ II - List \$49.95



Fixed Location

Kablit™ T-Lock - List \$39.95



Any Location

**Quick And Easy To Install
Travels With Your Powerbook™**

**Padlock Security
Provided by
Master Lock**



Secure-It

Order now — Call 800-451-7592...

18 Maple Court, East Longmeadow, MA 01028, USA phone 413-525-7039

The particular Master Lock Trademarks used are trademarks of the Master Lock Company and are used by Secure-It, Inc. under license.

CIRCLE 424 ON READER SERVICE CARD

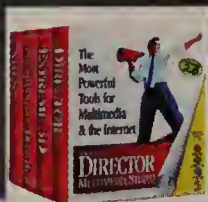
Student - Teacher & School Discounts!

LATEST VERSIONS & FULL PACKAGES

Director Multimedia Studio 2.0

INCLUDES:

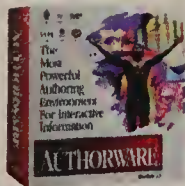
Director 5.0
Extreme 3D 1.0 **\$899**
xRes 2.0
SoundEdit 16 Plus Deck II



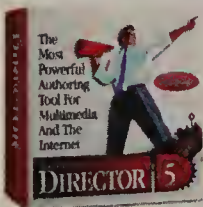
#1
In Education!



QuarkXPress 3.32
\$299



Authorware Pro
3.5 \$975



Director 5.0
\$589



Filemaker Pro 3.0
\$129



Fractal Painter 4.0
\$219



The Black Box
2.0 \$75



Strata StudioPro
1.7.5 \$469



Minicad +6.0
\$319



KPT Bryce 2.0
\$119



Infini-D 3.1
\$249

3D Website Builder.....	\$99	Form Z 2.8.....	CALL	Power FPU.....	\$75
4Th Dimension 3.5.....	\$449	German Power Translator....	\$99	PrintShop Deluxe 1.1.....	\$55
8100/110 MHZ CPU.....	\$2249	Groller 1996 Encyclopedia...	\$59	PlugInfinite.....	\$19
Accura 288 v.34 Fax Modem.	\$185	Hard Disk Toolkit 2.0.....	\$109	Quickeys 3.0.1.....	\$85
Alias SketchI 2.0.2.....	\$229	Helix Express 3.5.....	\$249	QX-Tools 1.0.....	\$79
Archicad 5.0 Student.....	\$475	Hypercard 2.3.1.....	\$89	QuarkXPress Passport 3.3.2	\$349
Astound 2.0.....	\$119	IdeaFisher Pro 6.0.....	\$75	Quickcam Color.....	\$239
Autocad R12 W/AME.....	\$199	Infinite FX.....	\$65	Raid Toolkit 1.8.....	\$249
Band-In-A-Box.....	\$69	Inspiration 4.1.....	\$89	Ram Doubler 1.6.....	\$55
Blueprint 6.....	\$149	IntelliHance 2.0.....	\$79	Ram/Speed Doubler Bundle.	\$89
Canvas 3.5.2.....	\$149	Internet Connection Kit 1.1...	\$45	Ray Dream Designer 4.0.....	\$95
Claris Works 4.0.....	\$89	Japanese Language Kit 1.2...	\$129	Ray Dream Studio 1.0.....	\$219
Coda Finale 3.5.1.....	\$249	JMP 3.1.5.....	\$329	SigmaPlot 5.0.....	\$199
Code Warrior 9.....	\$129	Kai's Power Tools 3.0.....	\$85	Sony Multiscan 15"SF II.....	\$499
Collage 2.0.1.....	\$69	KPT Convolver 1.0.....	\$85	Speed Doubler 1.1.....	\$55
Color It! 3.0.....	\$39	KPT Final Effects 3.0.....	\$349	StudioVision Pro 3.0.1.....	CALL
Conflict Catcher 3 1.0.....	\$59	KPT Final Effects AP 1.0.....	\$105	Stylist 1.0.....	\$85
Corel Draw 6.0.....	CALL	KPT Power Photos 1,2 or 3...	\$85	Supercard 2.5.....	\$199
Cricket Graph III 1.5.3.....	\$79	KPT Vector Effects 1.0.....	\$85	Supercard 2.5 MegaStudio...	\$249
ChemDraw pro 3.5.....	\$149	Let's Keep It Simple	\$119	Supra Fax/Modem 288 v.34...	\$229
ChemOffice Pro 3.5.....	\$299	Lightning Draw GX.....	\$99	System 7.5.2 Software.....	\$85
Datadesk 5.0.....	\$369	Live Picture 2.5.....	\$469	Soft PC 3.0.....	\$89
Debabelizer Toolbox 1.6.5...	\$219	Logomotion 2.0.....	\$69	SoftWindows 3.0.....	\$229
Deltagraph Pro 4.0.....	\$89	M.Y.O.B. 6.0.....	\$49	SoftWindows 95'.....	\$269
Design Workshop 1.2.2.....	\$229	M.Y.O.B. 6.0 W/Payroll.....	\$90	SoundEdit 16 Plus Deck II...	\$269
Director Toolbox Pro.....	\$99	Mac Academy Tutorial Videos	\$35	Targa 2000 Pro.....	\$4599
DrawTools 1.0.....	\$79	Mac Draft 4.2.1.....	\$199	Teleport Platinum 288.....	\$199
Digitrax 1.2.....	\$99	Mac Link + Translator Pro....	\$99	Texturescape 2.0.....	\$79
DrawingSlate II 12x12.....	\$215	Maple v 4.0.....	\$599	Transjammer Vol 1or 2.....	\$59
Elastic Reality 1.2.....	\$149	Mathcad 3.1.....	\$69	Turbo Mouse 5.0.....	\$105
Empower Pro.....	\$110	Mathematica 2.2.2 Student...	\$149	Up-Front 3D 2.0.1.....	\$99
Encore 4.0.4.....	\$249	Media Toolkit 2.0.....	\$399	Vellum 3D 2.7.....	\$549
Envelopes Starter Pack.....	\$65	Minitab 10 XTRA.....	\$199	VideoShop 3.0.....	\$199
Extreme 3D.....	\$199	MouseMan.....	\$69	Virex 5.6.5.....	\$49
Electric Image 2.5 Student...	\$749	MathType 3.1.....	\$99	Opcode Vision 3.0.1.....	Call
EndNote Plus 2.1.....	\$165	Media Paint 1.1.1.....	\$199	Strata Vision 3D 4.0.....	\$179
Final Draft 4.0.....	\$125	MicroNet 270 MB Syquest.....	\$549	Vista Pro 3.0.....	\$69
Fontographer 4.1.....	\$149	Nisus Writer 4.1 W/ Lang Key.	\$179	Wacom Art Pad II 4x5.....	\$129
Fractal Dabbler 2.0.....	\$45	Now Bundle 3.6.....	\$69	Wacom Art Pad II w/Dabbler..	\$149
Fractal Poser 1.0.....	\$99	Now Utilities 6.0.....	\$55	Wacom Art Z II 12x12.....	\$399
Freehand 5.5.....	\$189	Overture 1.2.....	\$249	Wacom Art Z II 6x8.....	\$285
Freehand Graphic Studio 2.0	\$399	OmniPage Pro 6.0 Bundle.....	\$189	Walkthrough Pro 2.5.....	\$229
FastTrack Schedule 4.0.....	\$129	PageTools 2.0.....	\$79	Word Perfect 3.5.....	\$99
Fileguard 2.9.....	\$119	Pivot 1700 .26 Monitor.....	\$975	xRES 2.0.....	\$199

Prices and availability subject to change

NOW CARRYING HARDWARE BY THE FOLLOWING....

*Calcomp - Drawing Tablets
*Wacom - Drawing Tablets
*Global Village - Modems
*Logitech - Scanners & Mice
*Canon - Printers

*US Robotics/Supra - Modems
*Micronet - CDROM & Syquest
*Radius - Monitors & Computers
*Okidata - Printers
*Sony - Monitors

**SAME DAY SHIPPING ON MOST ITEMS.
**ADOBE, SYMANTEC & MICROSOFT PRODUCTS
AVAILABLE TO QUALIFIED STUDENTS,
TEACHERS & SCHOOLS.
**SCHOOL PURCHASE ORDERS WELCOM
**NO SURCHARGE ON CREDIT CARDS.
**IBM & MAC PRODUCTS AVAILABLE.

Visit our Web Site!!

<http://iaswww.com/source.html>



CALL FOR
FREE CATALOG!
(800) 289-3275

INCLUDES COMPLETE PRICE
LIST & FREE PRODUCT INF..

WE WILL BEAT ANY ADVERTISED PRICE!!

The
SOFTWARE
Source

1-800-289-3275



DISCOVER

VISA



2517 Hwy. 35, Bldg. L
Manasquan, NJ 08736
(908) 528-0030

FAX (908) 528-9378
E-MAIL: SFTSWS@AOL.COM

CIRCLE 423 ON READER SERVICE CARD

FREE
You Don't Know
Jack Lite*
with any order

United CD ROM

Free Software
with every purchase!

1•800•UNITED4

1•800•864•8334

<http://www.unitedcdrom.com>

CALL FOR A FREE CATALOG!

OVER 5,000 TITLES IN STOCK DAILY!



Games of Fame II
by Starplay Productions
A bundle of award-winning Mac games. Includes Pegleg, Loony Labyrinth Pinball & Glider Pro.

51576 **\$27**



Majestic - Part I
by Piranha Interactive
Unravel the mystery behind Majestic's voyage. She set sail from Earth's harbor & never returned.

50905 **\$37**



All Star Kid's Pack
by Encore Software
Includes: The Muppets, Hello Kitty, Sesame St., The Jungle Book, Math Ace Jr., Peter Pan, & Art Center.

50512 **\$26**



Congo
by Viacom New Media
Brings to life a gauntlet of dense jungles & subterranean caves. Find the cache of diamonds deep in the lost city of Zinj.

45846 **\$34**



Le Louvre
by BMG Interactive
Interactive tour of this world renown art museum that showcases its remarkable architectural & artistic evolution.

48048 **\$30**



Treasure Quest
by Sirius Publishing
Professor Faulkner has left an inheritance of one million dollars to the one that unlocks the secrets in his mansion.

45840 **\$42**



Bad Mojo
by Acclaim
You are a cockroach in this mysterious adventure where you explore the inner recesses of a dangerous world.

49109 **\$48**



Residents' Bad Day on the Midway
by WEA
Dodge death & taxes as you try to solve a mystery of murder & intrigue at the carnival.

44606 **\$37**



Hunchback of Notre Dame
by Pixel Genius
Combines an interactive storybook with 10 exciting educational games. A Reading Success for Kids title.

51339 **\$29**



Heroes of Might & Magic
by New World Computing
Conquer the world through strategy, might & battle savvy. Play against up to 3 computer warlords.

44753 **\$33**



Nick Jr. Play Math
by Viacom New Media
Unlike many preschool products, Nick Jr. lets kids see the results of their choices. Learn counting, sorting & more!

45870 **\$18**



Sky Trip America
by Discovery Comm.
Hop into your flying time machine & soar into key events in American history. Enjoy the narration of various celebrities.

49217 **\$24**



Mad Dog McCree II
by American Laser Games
Challenge your shooting skills. Try to beat Mad Dog to the lost gold & then return to the old mission.

41071 **\$36**



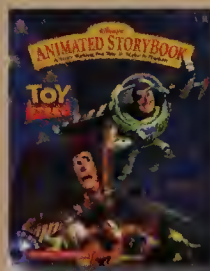
Elk Moon Murder
by Activision
Race against the clock as you visit the crime scene, interview suspects, gather forensic evidence & search for clues.

47503 **\$24**



Way Things Work
by Dorling Kindersley
Based on the book by David Macaulay. You can actually see & hear more than 200 inventions come to life.

39433 **\$32**



Toy Story
by Disney Interactive
Kids enter the wacky 3D world where toys come to life. As they read along, it's up to them to save Woody & Buzz.

49268 **\$32**

FAX ORDERS: 1•217•352•9749
International Orders Call
1•217•352•8737

ORDER AS LATE AS 9:30 PM!
SAME DAY SHIPPING**

Hours: M-F 8 AM - 10 PM
Sat. 8 AM - 5 PM • Sun. 12 NOON - 5 PM
(All times listed are CST)

CONTACT US ONLINE!

BBS 1-217-352-9654
CompuServe: 76043,1605
America On-Line: UNITEDCD
UNITED CD ROM INFO via Fax back at
1•217•352•8123
<http://www.unitedcdrom.com>



Blown Away
by Changeling
YOU face to face with an evil genius. YOU against the ticking clock. YOU facing explosives timed to blow at your first misstep.

49702 **\$38**



Torin's Passage
by Sierra On-Line
As Torin, your quest is to find the sorceress who kidnapped your parents & force her to break her spell.

43161 **\$47**

* While supplies last. All prices in U.S. dollars. Shipping charges apply to free offers.
** Orders received as late as 9:30 PM (CST) for 2nd day air. Call for other deadline times. Special offers, item availability and prices may vary according to format and are subject to change without notice. Not responsible for inadvertent errors.

ALL MAJOR CREDIT CARDS



CODE 043

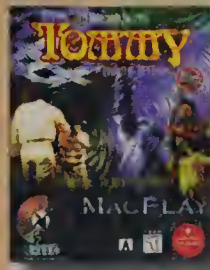
ACCEPTED

Clientes internacionales por favor enviar sus ordenes por fax a los Estados Unidos al 217-352-9749 o por e-mail a la direccion UNITEDCD@aol.com. Visite nuestro World Wide Web en <http://www.unitedcdrom.com>



WarCraft II
by Davidson/Blizzard
Continue the struggle for Azeroth with powerful new allies, terrifying creatures, & ingenious weaponry.

50940 **\$44**



Tommy
by Interplay
Take part in a non-linear journey through all of Tommy's incarnations, from the rock opera to the Broadway stage.

48689 **\$30**

CIRCLE 487 ON READER SERVICE CARD



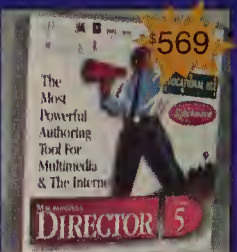
\$289

QuarkXpress 3.32



\$469

Strata Studio Pro 1.75



\$569

Director 5.0



\$239

Infini-D 3.2



\$78

Kai's Power Tool



\$215

Fractal Painter 4.0



\$285

Wacom ArtZ 6x8



\$169

Freehand 5.5



\$315

MiniCAD +6

80% OFF
SOFTWARE DISCOUNTS
up to

Student/Teacher/School Full Packages & Latest Versions

Academic Credentials Required

**Desktop
Publishing Bundle**
QuarkXpress 3.32 + leading
photo editing package + leading
illustration package \$699

'Only' limited to what we offer.

**SOFTWARE
PLUS**
Academic Inc.

Info (201) 288-7441
Fax (201) 288-7442
splusacdem@aol.com

377 Route 17 South Suite #116
Hasbrouck Heights, NJ 07604
Web address:
<http://tribeca.ios.com/~spai/index.html>

ArchiCAD 4.55 \$495
AutoCAD R12 Mac \$189
Authorware Pro 3.5 \$950
Coda Finale 3.5 \$249
Code Warrior 9 Gold \$128
Conflict Catcher 3 \$59
Dec II 2.5 \$189
Debabelizer Toolbox 1.65 \$219
Director Multimedia Studio \$899
EndNote Plus 2.1 \$179
Electric Image 2.5 student \$739
Fontographer 4.1 \$159
Form-Z 2.7.2 \$950
Final Draft 3.0 \$125
Fractal Poser 1.0 \$95
Internet Connection Kit \$39
Kai's PowerTools 3.0 \$78
KPT Bryce 2.0 \$129
Kpt Convolver 1.0 \$78
Mathematica 2.22 \$145
MiniTab Rel. 10 \$199

Norton Utilities 3.2 \$89
Now Utilities 5.0 \$59
Omni Page Pro 6.0 \$249
PageTools 2.0 \$99
Paint Alchemy 2.0 \$84
Quickeys 3.01 \$84
Ram Doubler 1.6 \$54
SAM 4.0 \$59
Soft Windows 3.0 PM \$239
Sound Edit 16 \$189
SuperCard 2.5 \$228
WACOM ArtZ II 12x12 \$439
Walkthrough Pro 2.5 \$228
WordPerfect 3.5 \$89
XRES 1.21 \$199

* Purchase Orders accepted from schools.
* We will beat any advertised price!!

We also Carry Microsoft Products.

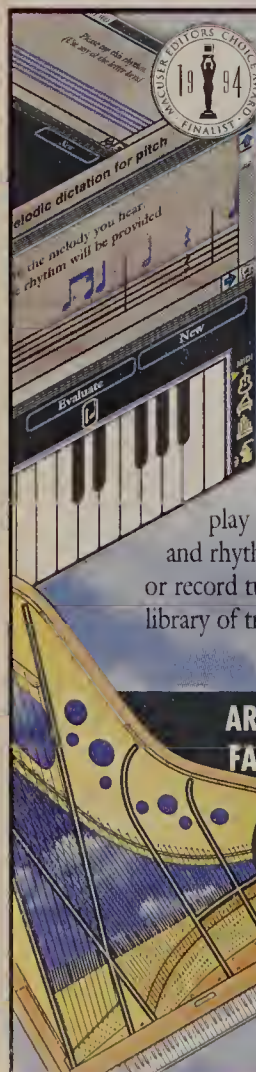
Call for 1000's of more titles.



1-800-377-9943

SOFTWARE PLUS

CIRCLE 538 ON READER SERVICE CARD



Practica Musica 3

Your personal music tutor now includes rhythm tapping, chord progressions, and many other exciting new features. More than ever the most complete music training package available. \$140

Kidmusic

NEW! Fun music learning and entertainment for kids. Tap keys to play with automatic accompaniment, play rounds, learn pitch and rhythm notation, write or record tunes. Expandable library of traditional songs. \$75



ARS NOVA • (206) 828-2711 • (800) 445-4866
FAX (206) 828-2132, <http://www.ars-nova.com>

Songworks

Not only prints your song, but helps you write it! Suggests tune and harmony ideas, plays, prints melody, chord symbols, lyrics- with or without MIDI. Song files compatible with A Little Kidmusic and Practica Musica. \$125

CIRCLE 484 ON READER SERVICE CARD

FULLSAIL
school of
digital media
film & video
audio
www.fullsail.com

**Real World
Education** 1 800 226 7625

CIRCLE 413 ON READER SERVICE CARD

**MUSIC
for the
MAC**

We sell the full range of music products for the Mac.

Mac BEAT!
1314 Rufina Cr. Ste. #A4
Santa Fe, NM. 87501

Best prices and customer support in the business!

FREE CATALOG
Info: 505-473-3434
Fax: 505-473-4647

1-800-MAC-BEAT

ONLINE BIBLE

FAST, POWERFUL, EASY TO USE

Deluxe CD - NIV • NASB • NKJV • NRSV • KJV w/Strong's + 9 other versions • Trans. in 14 other languages • 20 Study Aids: Lexicons, X-Refs., Topics, Dict., Commentaries and more.....\$90

Classic CD - Has all features of the Deluxe CD except NIV, NASB, NKJV, NRSV trans.\$40

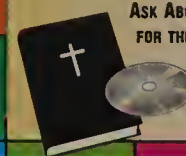
"...the standard by which all others are judged." - MacHome JOURNAL 8/94

ASK ABOUT OUR OTHER PRODUCTS FOR THE CHRISTIAN COMMUNITY

800-554-9116

603-927-4508

By The Numbers, Inc.





**Graphic
Astrology**

**State-of-the-art
astrological software**

FREE catalog 1-800-827-2240

(860) 444-6641 • Fax: (860) 442-0625

Email: astrology@timecycles.com

www.timecycles.com

Now on
the Web

Bible Book Store On Disk

Full Featured, Fast and Friendly Bible Study software. As the leader in Bible Study software since 1981 we have continued to listen to our customers and provide them with the tools they need. We offer the most comprehensive line of Bible study tools available.

Call for FREE catalog.

Bible Research Systems

2013 Wells Branch Pkwy #304

Austin, TX 78728

800/423-1228

512/251-7541

CIRCLE 412 ON READER SERVICE CARD

NEW AMERICAN STANDARD

The most literally accurate Bible...
...in the English language

BIBLE MASTER™

Lockman Software

For Windows™ & MAC®

NEW

Ask about our new BibleMaster Bundle for only \$49.95 on CD-ROM.

Don't have a CD-ROM drive?

Ask about our two Bundles available on disk.

American Bible Sales

870 S. ANAHEIM BLVD. ANAHEIM, CA 92805

1-800-535-5131

*The Standard of
Biblical Excellence...*

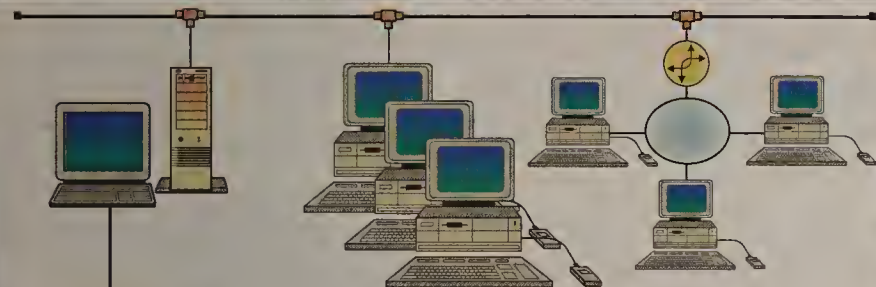


CIRCLE 537 ON READER SERVICE CARD

"I always look at the entire Macworld Shopper section to see what is available. I also like to check the prices of all the different products."

—Owner

Computer Consultants



Detailed Networks in Minutes with NetDraw® 2.0!

With over 330 professionally drawn images, NetDraw® 2.0 gives users immediate access to clip art symbols for LANs, WANs, computing, PCs, telephony and patching and cabling. Also included are flow charting symbols as well as mapping graphics to depict your networks geographically. Available now for just \$129.95, NetDraw® 2.0's complete clip art library is easily imported into most Macintosh applications. **Call 800-643-4668 to order your copy today!**

NetDraw Clip Art for Building Networks®

CIRCLE 461 ON READER SERVICE CARD

Different people use different programs...
Don't get frustrated... Get CADMOVER®

From the beginning to the end of your project our line of Graphics Translators will allow you to get the most out of your preferred programs.

30 2D & 3D graphic input/output file formats

• Batch processing • Exact Scaling • High Accuracy
• Editable Artwork • Font Mapping • Power Mac Native
DXF, EPSF, PICT, IGES, CGM, DDES2, etc...

1-800-579-2244 • kandusales@aol.com

www.ibb.com/kandu.html

KANDU
software corporation

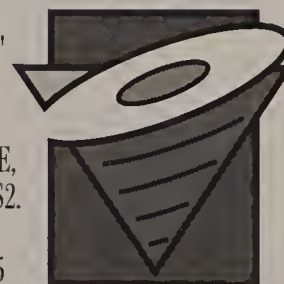
CIRCLE 414 ON READER SERVICE CARD

!@\$\$%#!!!

MY STUFF IS GONE!

Sound familiar? We hear it 180,000 times a year because that's how many hard drives we repair each year. Everything from head crash to accidentally emptying the trash. So who are you going to trust to recover your valuable info?

- ▼ 95% success rate on all 5¼", 3½" & 2½" disk drives.
- ▼ 1 day evaluation.
- ▼ We support SCSI, IDE, ESDI, MFM, AT, XT, PS2.
- ▼ Self-engineered software/tools and \$5 million in equipment.



- ▼ Manufacturer-trained technicians specializing in data recovery.
- ▼ 2000 sq.ft. Class 100 Clean Rooms.
- ▼ Competitive pricing—Call for a competitive quote.

DATA RECOVERY: 800-2VALTRON

805-257-0333 • <http://www.valtron.com>

28309 Avenue Crocker, Valencia, CA 91355

Active Buyers turn to the



Over 530,000 Macworld subscribers turn to the Macworld Shopper monthly. 531,250 of these buyers have taken action as a result of seeing an ad in the Macworld Shopper.

Macworld Shopper Purchase Study, 1995

"The #1 Mac Desk."

**Free
Catalog!**



as low as
\$159

1.800.688.2446

AGIO DESIGNS™ Fax: 503.690.1423 support@agio-designs.com

CIRCLE 436 ON READER SERVICE CARD

SO YOUR HARD DRIVE SPLIT AND TOOK ALL THE DATA WITH IT?

PROFESSIONAL DATA RECOVERY SERVICES.

HARD DRIVES, FLOPPY DRIVES, SYQUEST EZ-135,
ZIP, JAZ, OPTICAL AND BERNOULLI.
ONE-DAY SERVICE AVAILABLE.
COMPETITIVE RATES.

800-743-0594

<http://www.recallusa.com>

TOTAL RECALL
THE DATA RECOVERY COMPANY

2462 WAYNOKA ROAD COLO SPRINGS, CO 80915 • 719-380-1616 • FAX 719-380-7022

CIRCLE 458 ON READER SERVICE CARD

WHEN YOU ABSOLUTELY, POSITIVELY HAVE TO GET YOUR DATA BACK...

*Another successful
recovery!*

- Hard Drive • CD-R • Disk Array
- All Removable Media • Tapes (DAT, QIC).

*FREE DIAGNOSTIC EVALUATION

800 469-2549

**Some restrictions may apply*



**MICRO
COM**

OVER 15 YEARS OF EXCELLENCE



19011 Ventura Blvd., Tarzana, CA 91356 818 881-7417 • 818 881-8015 Fax

CIRCLE 422 ON READER SERVICE CARD

Data Recovery in hours.

- Over 10 years of experience with clients worldwide including Apple, NASA, HP, and FedEx.
- We've recovered more than half-a-million megabytes of Mac Data alone.
- You only pay when there's a recovery.
- Express One-Day Service is available.
- Call 24 hours a day.

415-495-5556 • FAX 415-495-5553 • RESTRICTIONS MAY APPLY
381 Clementina Street • San Francisco, California 94103



LAZARUS

DATA RECOVERY

Working at the speed of business.

800-341-DATA

CIRCLE 427 ON READER SERVICE CARD

Data Recovery and Assistance: 800 440-1904



DriveSavers' advanced, proprietary techniques and amazing success stories have been featured on CNN, C-Net, and NextStep, and appeared in *The Los Angeles Times*, *MacUser*, and *Nation's Business* (to name just a few). That's because, since 1985, businesses and individuals have trusted us to recover data others said was lost forever. Just give us a call. We can save it!

Visit us at: www.drivesavers.com

400 BEL MARIN KEYS BL., NOVATO, CA 94949, PHONE: 415-382-2000, FAX: 415-883-0780

CIRCLE 510 ON READER SERVICE CARD

NEXTWAVE SERVICE BUREAU

35mm SLIDES & DUPES
4X5's & SCANS
PC & MAC
OVERHEADS
COLOR PRINTS:
Fiery, Iris, Cactus
COMPETITIVE PRICING

In New York 212/989 2727
elsewhere 800/445 9002
bbs 212/989 3290
AMERICAN EXPRESS • VISA • MASTERCARD • DISCOVER

CIRCLE 488 ON READER SERVICE CARD

indigo™

print only what you need!

DIGITAL
OFFSET
COLOR™

PC/Mac Files
Go Direct
To The Digital Press

Short-Run 4-Color Offset Printing
Brochures, Press Kits, Product Literature,
Business Cards, Newsletters, Phone Cards

- Send files - FTP • ISDN • BBS
- 24-48 hour on-demand service
- Print 1-1000's "Offset Quality"

Kodak
PHOTO CD
SERVICE PROVIDER

Pro/\$8 • 35mm Master/\$.90
Slides & Overheads
4x5 Format Imaging
Huge Color Posters
Dye-Sub Color Prints

IMAGERS
Overnight Digital Services
800-398-5817 or 404-351-5800
1575 Northside Dr. Suite 490 Atlanta 30318
www.imagers.com

CIRCLE 429 ON READER SERVICE CARD

SLIDES

From PC & Mac files \$3.75
4x5 chromes/negs \$30
Dye sub print/overhead \$18
Hi Res Scanning \$10

Call for special pricing on Quantity
Duplication of Slides & Overheads

Show & Tell 39 W38th St., NY, NY 10018
212 840 2912 • 212 840 7953 (fax)

CIRCLE 550 ON READER SERVICE CARD

DESKTOP OUTPUT SERVICES

50% OFF
YOUR FIRST JOB

MAC & PC FILES ACCEPTED

■ Linotronic output up to 3386 dpi
■ Dye-Sublimation ■ Wax Thermal
■ Color Laser Prints/Copies ■ Big Color
Posters ■ Scanning (including 3D art)

The only service bureau with a 10 year track
record offering the highest quality, fastest
turnaround and lowest prices.

SPECTRUM ARTS, LTD.
7455 New Ridge Rd. Suite E Hanover, MD 21076
800-788-1357 410-691-7715 301-621-1181

CIRCLE 465 ON READER SERVICE CARD

Data Recovery

Mac Specialists
Novell, DOS, Windows 95

ECO Electronics, Inc.



The
data recycling
center

ECONomically and ECOlogically the
place to send your hard drive, removable media,
and/or floppy diskettes!

No Evaluation Fees
24 Hour Service Available
17 Years Experience
Competitive Pricing
Other Operating Systems - Call!

800-339-3412

Call for 10% off
with this ad.

407-691-0019 • 407-691-0014 Fax
4115 Burns Rd., Palm Beach Gardens, FL 33410

CIRCLE 430 ON READER SERVICE CARD

ONTRACK DATA RECOVERY

The World Leader
in Professional
Data Recovery Services!

• Mac Specialists
• Any Media
• All Operating Systems
• Emergency Services



Ontrack
DATA RECOVERY®

1-800-872-2599

West Coast Federal Customers
1-800-752-7557 • 1-800-650-2410

Internet: <http://www.ontrack.com>

CIRCLE 459 ON READER SERVICE CARD



THROWING AWAY TONER CARTRIDGES

Remanufactured Cartridges
Guaranteed Good As New

National Toner

Recycling & Supply, Inc.
29 HARBOR AVE., NORWALK, CT 06850

From \$36 (800)676-0749
(203)853-2998 Fax (203)853-1258

CIRCLE 456 ON READER SERVICE CARD

MAC REPAIR

Mac Shop Northwest

- Apple™ Certified Technicians
- One-Day Service Turnaround*
- Hard Disk Repair & Data Recovery
- Up to 75% below Dealer Rates
- Component-Level Repairs
- Expert Advice and Prices by Phone
- Power Supplies & Logic Boards
- Lifetime Repair Warranty*

Tel: 1-503-642-3456
*on many repairs. Visa/MC/AX. Fast overnight
shipping available. We use genuine Apple™ parts.

1-800-MAC-SHOP

CIRCLE 515 ON READER SERVICE CARD

MAC REPAIR & UPGRADE

24 HOUR SERVICE TURNAROUND • LONGER WARRANTY
FREE DIAGNOSTIC • COMPETITIVE PRICE



DT&T

**MACINTOSH
SERVICES, INC.**

- * Specialize in component repairs:
• Power Mac • Power Book • Logic boards
- * Advance Exchanges

800-622-7977

720 East Evelyn Ave., Sunnyvale, CA 94086 • Tel: 408-720-9899 • Fax: 408-720-9459
<http://www.dttservice.com>

CIRCLE 504 ON READER SERVICE CARD

"I always look at the entire
Macworld Shopper section to
see what is available. I always
like to check the prices of all
the different products."
-Owner,
Computer Consultants



ACCOUNTING SOFTWARE

COMPLETE BUSINESS SOLUTIONS

One-stop shop for hardware, software, financing and services for any size business. Our accounting programs range from basic to sophisticated multi-user systems plus Point of Sale, Inventory, Invoicing and Payroll packages. Call for a catalog or e-mail us at info@maxworld.com.

MAX COMPUTERS • (800) 656-6299

1506 25th Street, San Francisco, CA 94107
<http://www.maxworld.com/> • Fax (415) 695-0257

CIRCLE 565 ON READER SERVICE CARD

COMPUTER TRAINING

Video Training for MACS

Clearly explained, easy-to-follow 4-tape set shows how to use your Mac more productively. Covers the Mac OS, word-process, spreadsheets, file-management tips, much more! 400 minutes of expert training for only \$89.95. Visa/Mastercard. 30-Day Money Back Guarantee.

SCRIBBLERS MEDIA, INC.

1775 N. State Street • Girard, OH 44420
(800) 860-2324 (24hrs) • <http://www.scribblers.com>

CIRCLE 576 ON READER SERVICE CARD

GENEALOGY SOFTWARE

REUNION®

The family tree software rated best by Macworld (6/95), MacUser (1/96), MacHome Journal (4/95). Create large wall charts, perfect for family reunions! To order call MacWarehouse (800)255-6227. Free demo on CIS, AOL (keyword: roots) and our Web site: <http://www.LeisterPro.com>.

LEISTER PRODUCTIONS

P.O. Box 289 Mechanicsburg, PA 17055
tel: (717)697-1378 • e-mail: info@LeisterPro.com

CIRCLE 579 ON READER SERVICE CARD

MACINTOSH PERIPHERALS

WE SAVE YOU MONEY!

MAC-PowerMAC-PowerBOOK Enhancement! Price Samples: 2.5" SCSI Case \$29.95, PowerMAC Accelerators \$34.95, ADB Keypad \$39.95, HD130-DB25F \$14.95, VGA-MAC Adpt \$9.95, MD8 SWBX \$14.95, cables from \$4.95. We also do APPLE II. Call/Write for Complete List. School P.O.'s welcome. VISA/MC.

MC PRICE BREAKERS

Orders 800-974-6117 Ex 18, Info 360-837-3042 Fax 360-837-2057
14415 SE Mill Plain Blvd., Ste 105B-219, Vancouver, WA 98684

CIRCLE 570 ON READER SERVICE CARD

MOBILE COMPUTING

Solar Power For Portable Computers

Recharge or run your PowerBook, Newton or portable PC with a revolutionary solar charger - the KIS Solar System is durable lightweight and will run or recharge most portable computers. Also extends battery life, creating big savings. Plug into the Sun! Visit our Web site at: <http://WildWestWeb.com>.

KEEP IT SIMPLE SYSTEMS

(800) 327-6882 ext 21 Fax: (406) 449-8946 Kiss@initco.net

CIRCLE 581 ON READER SERVICE CARD

RECRUITMENT

V.I.P. MATCHMAKING INTERNATIONAL

V.I.P. Matchmaking International guarantees to find your perfect match within 30 days. You "design" the person of your dreams and I will find him/her for you! Invest in your future, let World Renowned Matchmaker, with a resume of thousands of successful matches find your perfect match! What have you got to lose.

FOR INFORMATION CALL NOW

310-289-4931
Beverly Hills

CIRCLE 572 ON READER SERVICE CARD

COMPUTER INSURANCE

"INSURANCE TO GO" (sm)

Insurance for your Powerbook that's on the go and your stay at home desktop computer. Covers against theft, fire, accidents, power surge, natural disasters including earthquake. Bonus free software coverage. Premiums start \$60 p/yr low deductible. Call 1-800-722-0385 for details.

THE COMPUTER INSURANCE AGENCY, INC.®

6150 Old Millersport Rd. NE, Pleasantville, OH 43148
1-800-722-0385

CIRCLE 568 ON READER SERVICE CARD

DRIVE SALES & REPAIRS

FLOPPY DRIVE REPAIR & SALES

Mac 3.5" 400k, 800k, & 1.44 MEG \$40.00
Advanced Exchange \$50.00 to \$85.00
New & Refurbished Drives CALL
Price includes most parts, cleaning & alignment. 1yr warranty on repair, 2yrs on new drives. Schools + Gov't. PO's accepted.

UPTIME COMPUTER SUPPORT SERVICES

<http://www.scvnet.com/~uptime>
Valencia, California 805-254-3384 Fax 805-254-1950

CIRCLE 571 ON READER SERVICE CARD

GENEALOGY SOFTWARE

Family Heritage File™

Most powerful and easy genealogy program. Rated "BEST" by Macworld. Designed by genealogy professionals • Graphic Pedigree, Descendants, Families, Individuals, Marriages, Surnames • Unlimited Info/Individual • Export • Gedcom • Jewish/LDS features. Demo \$7. Free Lit. Pak.

STAR·COM MICROSYSTEMS

Order Direct • Visa/MC OK • 801-225-1480
Windsor Park E., 25 W. 1480 N., Orem, UT 84057

CIRCLE 573 ON READER SERVICE CARD

MANUFACTURING SOFTWARE

The Qube Controller™

Complete GUI-based system runs x-platform on Macintosh® & Windows™. Includes Inventory, Multi-Level BOMs, MRP II, CRP, Job Cost, Lot, Batch & Serial #s, and much more! Complete accounting modules or interfaces w/ Great Plains®.

QUBE CONNECTIONS, INC.

One Fayette Park, Syracuse, NY 13202-2148
Tel (315) 476-2075 • Fax 476-3138 • qcisales@aol.com

CIRCLE 574 ON READER SERVICE CARD

POWERBOOK BATTERIES & RAM

Your Best Battery & Ram Source!

From PB 100 to 5300, Erudite has what you need to stay mobile...at prices that won't slow you down. We feature power products from BTI & Absolute, memory from Viking Components — all backed by warranty & 30-60 day MBG. Call/fax/e-mail for your best price! Visa/MC/Amex Accepted.

ERUDITE PRODUCTS CORP.

409 Grand Ave., Englewood, NJ 07631
800-310-8505 Fax 201-871-8301 EruProCorp@aol.com

CIRCLE 577 ON READER SERVICE CARD

REFERENCE SOFTWARE

Words of Women - Quotations

An interactive database of 3,000 quotations by historic and contemporary women. Locate the perfect quote quickly for your speech, article or newsletter. Copy into your word processor. 640 x 480 pixel display with 256 colors and 4MB of RAM recommended.

POWERDYNAMICS PUBLISHING INC.

6000 California St, San Francisco, CA 94121
1-800-WOMEN-02 \$29.95+\$6 s/h (Visa/MC)

CIRCLE 582 ON READER SERVICE CARD

COMPUTER INSURANCE

INSURES YOUR MAC

The Computerowners (SM) insurance policy repairs or replaces hardware, media and purchased software. \$49 a year covers up to \$2,000 of equipment against theft, fire, accidents, power surge, natural disasters and more! \$50 deductible. Call for immediate coverage or information. 1-800-800-1492.

SAFEWARE, The Insurance Agency, Inc.

2929 N. High St., P.O. Box 02211
Columbus, Ohio 43202

CIRCLE 569 ON READER SERVICE CARD

EDUTAINMENT

CD-ROM Extravaganza

Family reference and edutainment software for Macintosh. Hundreds of titles available from 65+ top-rated publishers, mostly at substantial savings below manufacturer-suggested retail prices. Write or call today for our free user friendly price list.

C.D. ROMULUS

P.O. Box 688 • Wolfeboro Falls, NH 03896
(800) 791-9804

CIRCLE 578 ON READER SERVICE CARD

HEALTH/FITNESS

Develop Muscle!/Be Free of Pain!

Create the ideal body you've always dreamed of! Electrical muscle stimulation uses adjustable impulses to rapidly develop muscle and/or provide relief from chronic pain. Medically proven, effortless & safe. Results guaranteed! Call for information or visit our website.

DAVID STEEL ENTERPRISES, INC.

1280 Bison, Suite B9507, Newport Beach, CA 92660
<http://www.davidsteele.com> OR 800.401.4677

CIRCLE 566 ON READER SERVICE CARD

MEMORY

LOW COST MEMORY

You need it. You want Top Quality Products that meet OEM specs.

You want Rock-Bottom Prices. You expect Great After-Sales Service. You want 100% Compatibility Guarantee. You expect Expert Tech Support. You want New Memory. You won't settle for anything less than a Lifetime Warranty. And yes, of course, you want your Shipment Today. SO WHAT ARE YOU WAITING FOR?

MEMORY FACTORY

(800)952-7867 • (408)437-1122 • Fax (408)437-1278

CIRCLE 575 ON READER SERVICE CARD

PROFESSIONAL TRAINING

Rent MacAcademy Videos by Mail

Videos are the easy way to learn! All major Mac programs available: over 100 different titles, each approximately 2 hours long. A two week rental including S&H, costs about a dollar a day. Return postage is prepaid. Ask about renting CD-ROMs by mail. Get our free catalog.

CAREERTAPES® ENTERPRISES

PO Box 309, Center Harbor, NH 03226-0309
(603) 253-7470 • LindseyA@aol.com

CIRCLE 567 ON READER SERVICE CARD

VIDEO ADAPTERS

VGA TO THE MACS!

MacVGA (new low price) \$9.95
MacVDO (universal, 4 switches) \$14.95
ResFly (resolutions on the fly) \$14.95
MSD/PC (reverse MacVGA) \$9.95
VGA Switcher, MacSwitcher \$49.95

MACADAPT

Visa/MC/AmEx/Disc • 510-525-0789 • fax:525-5740
jzjames@macadapt.com • <http://www.macadapt.com>

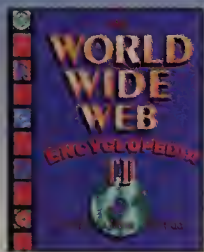
CIRCLE 583 ON READER SERVICE CARD

EDUCORP Direct®

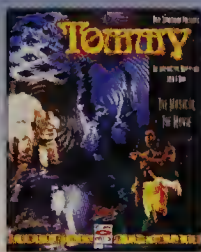
Over 1,700 CD-ROM titles in stock

Entertainment/General

- Sports and Fitness
- Music and Movies
- Life Styles
- Japanese Animation
- Screen Savers
- Creature Features
- Internet/BBS
- Shareware
- Home Publishing



World Wide Web Encyclopedia
#51838, \$24.99



Tommy
#51891, \$39.99



Part #	CD-ROM Title	Price
50304	BH & G Gardening CD	\$33.99
51504	Key CAD Complete.....	29.99
51505	Key Design Center 3D	29.99
50340	Marilyn & André.....	29.99
50612	Star Trek NG Technical Manual	39.99

Design/Multimedia

- Applications
- Backgrounds
- Clip Art
- Fonts
- Logos
- Stock Photos
- Textures
- Tutorials

Part #	CD-ROM Title	Price
2067	1000's of Fonts.....	\$19.99
51717	Artbeats Webtools	57.99
51131	Cartoon Art.....	19.99

Games/Adventures

- Action
- Adventure
- Arcade
- Casino
- Flight
- Mysteries
- Puzzle
- Shooting
- Space
- Sports
- Strategy
- Thinking

Part #	CD-ROM Title	Price
51150	Buried in Time.....	\$38.99
50316	Midnight Stranger 18+ Uncut.....	39.99
51148	Riddle of Master Lu.....	38.99
2032	Total Distortion.....	39.99



Bad Mojo
#51733, \$57.99



Star Trek Final Unity
#51153, \$49.99



Rebel Assault II
#51588, \$54.99

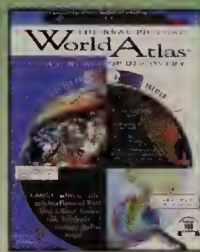


Foul Play
#51442, \$39.99

FREE!

Call now for your free color catalog! Order \$85 or more and get *Apollo XIII* (#P51353) CD-ROM free! Act now, this is a limited time offer. You can get *Apollo XIII* for just \$14.99, use part #51353.

Education/Reference



Small Blue Planet Real Picture Atlas
#2090, \$39.99



Art & Music
#51898, \$28.99

	Part #	CD-ROM Title	Price
• Art	51649	Encarta '96	\$49.99
• Dictionaries	50421	Learn to Speak French 4.0	99.99
• Encyclopedias	51537	Learn to Speak Spanish v.6	99.99
• Language	50774	Leonardo the Inventor	29.99
• Medical	51555	Multimedia Atlas Duo 2	24.99
• Maps and Atlases		World Atlas & Almanac 6.0 with U.S. Atlas & Almanac 6.0	
• Phone Directories	51738	PhoneDisc PowerFinder 96	99.99
• Science	51683	Redshift 2.....	49.99
• History & Culture	51393	Street Atlas 3.0 for Macintosh	69.99
• Personal & Career Development	51879	Webster's New World Dictionary ..	18.99



A Passion for Art
#50949, \$35.99

Kids Edutainment

	Part #	CD-ROM Title	Price
• Creativity	51605	Casper's Brainy Book	\$32.99
• Early Learning	51853	Darby the Dalmatian.....	19.99
• History/Geography	51584	Math Muncher Deluxe.....	24.99
• Language	51718	Mr. Potato Head.....	35.99
• Math	51622	Putt Putt Saves the Zoo	34.99
• Problem Solving	51963	Yellow Brick Road I	29.99
• Reading			
• Reference			
• Science & Nature			

Get 2 Brøderbund Living Books for just \$44.99!
Arthur's Teacher Trouble with
Tortoise and the Hare #51705

Save \$26.99 Get Kid Pix Studio & Amazing
Writing Machine for only \$57.99, #51704



Order 24 hours a day, 7 days a week



1-800-843-9497

Prices subject to change without notice.

Visit our web site at www.educorp.com

Info: 619-536-9999 • FAX: 619-536-2345 • 7434 Trade St • San Diego, CA 92121 • Internet: service@educorp.com

Circle 157 on reader service card

MACWORLD August 1996 243

W49

E-mail—Order Bride

DISCOVERING MY HUSBAND'S NET WORTH, SIGHT UNSEEN

ON OUR SECOND DATE, Dave and I stood atop the Hills Brothers Coffee building at the edge of San Francisco, in a sea of people celebrating Ikonc, a new Web community that hopes to use the Internet to bring people together, face-to-face, to work on local community problems. We chatted up our fellow attendees, took in a breathtaking view of the Bay, and snuck off once or twice to make out like giddy teenagers (which we decidedly are not). It had been not quite 4 weeks since our first in-person date, 9 weeks since we'd met online, and 25 days since we'd last seen each other—on our wedding night.

Some of our friends were surprised that on the day after we'd married we were again two time zones apart and in most ways back to our former lives—Dave on the West Coast working in computer-industry PR, and me posting my weekly column to Prodigy's list server and raising my son, Henry, here in Austin, Texas. What really startled people, though, was our decision to marry without a longer in-person courtship.

Proceed with Caution

Ordinarily, I'd have agreed. But nine virtual weeks of constant words and thoughts can, I discovered, offer far more insight than nine weeks of phone tag and dinner dates and mascara and lingerie.

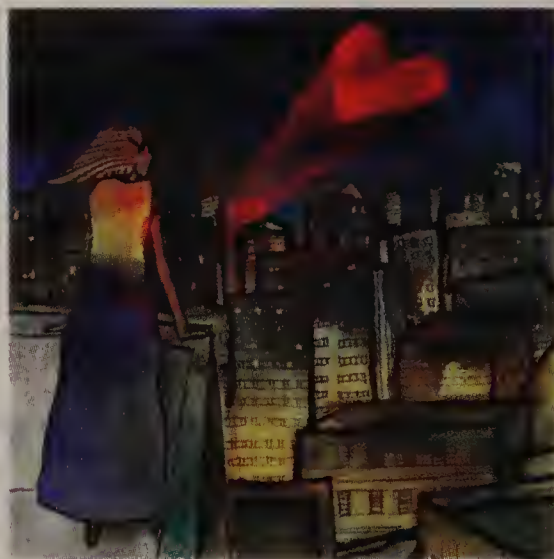
Initially, he'd sent a brief fan note. I responded with a brief thank-you. Later, a note arrived from Women's Wire editor Laurie Kretchmar, whom I had profiled. She had told Dave, whom she knew professionally, about my column. Laurie informed me that Dave was, based on my writing, very interested in me.

This was not the first time I'd been offered a shot at Net romance, and I had a rule: Before I got involved electronically, there had to be a mutual friend, an

introduction—some indicator that the man in question was not psycho. Laurie's note opened a door: I wrote Dave again.

We progressed to phone calls and photos, but the E-mails were my favorite part. Never sex-laden, they afforded deep confession, passionate catharsis, and insight into our beliefs, our mistakes, and where we had been and hoped to go. We seemed to have more in common than we'd had with our respective strings of exes. I thought, "If this man is just 75 percent in person who he is electronically, I want to spend my life with him." He'd already told me that he felt likewise.

That's what I like about E-mail. If two people can be totally honest, you can cover a lot of ground fast. Relying solely



on words for several weeks, we weren't distracted by other forces, like mistaking physical passion for actual love. Yes, this meant laundry lists of what each did and did not want in a relationship. But Dave's messages conveyed a perceptible tone and aura—qualities said to be imperceptible online—that caught me and held me.

On the other hand, I am not stupid. While I didn't like to think Dave was misrepresenting himself, I couldn't rule it out. I told him I planned to check him out—and again, the Net expedited the process. Our lives had crisscrossed professionally for years, so we had more than

a few mutual colleagues. I asked around. Siskel and Ebert could not have given a better recommendation if they had eight thumbs. Even so, I am a firm believer in chemistry. I asked Dave to fly here, to reveal his physical being. If we clicked, I told him, I would marry him immediately.

We did click—at the luggage carousel of the airport. And so I did marry him, on top of the highest peak in Austin, three days after his arrival, without a monitor, modem, or laptop in sight.

Tell 'Em We Met at the Office

Dave's dad, Dave Sr., phoned to congratulate us after the event. While our apparent haste baffled others, Dave Sr. was more puzzled by our method of courtship. He had actually helped mold the Internet in Cambridge, Massachusetts, in the late fifties and sixties, and was used to thinking of it as primarily a medium for sharing scientific research. "You fell in love on the Internet? In my day there *were* no women on the Net."

The Internet has come a long way, I reminded him. It's still about exchanging information, but the amount and type of information exchanged falls into a much broader realm. Sometimes, as in our case, a more personal realm. For us, the Internet wasn't about singles-bar-style chat rooms or desperately seeking virtually what we could not find in real life. (In our jobs, the Internet *is* real life.)

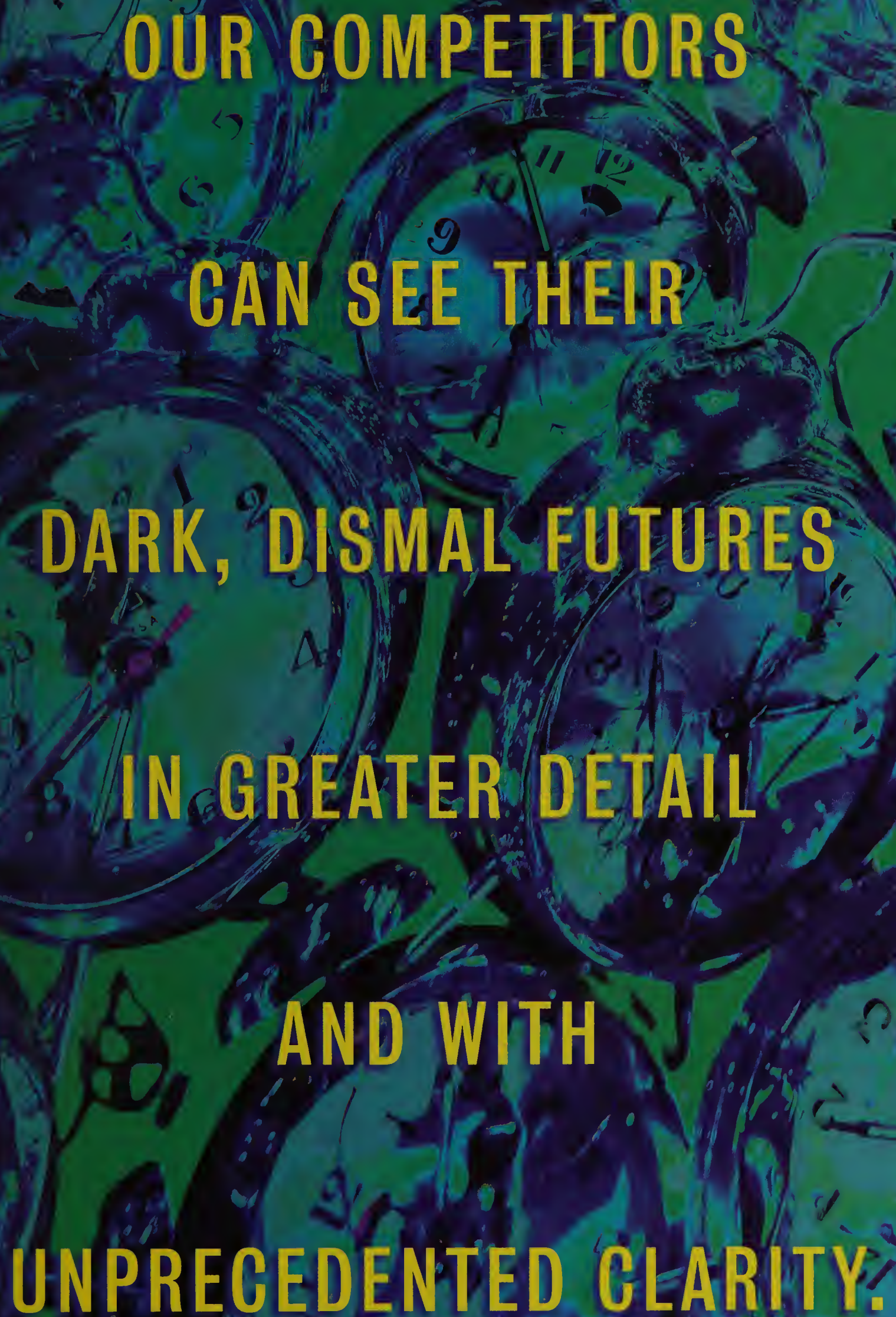
"Think of ours as an office romance," I told him. "In a way, Dave and I share a huge workspace. And we're not the first couple who had the good fortune to meet in the company mailroom."

As far as we can tell, though, we are the happiest. **m**

SPIKE GILLESPIE (<http://www.marystreet.com/SPIKE>) lives with her son, Henry, in Austin, Texas, where she writes a listserv and an online advice column. Her work has also appeared online in Salon and Word, and in print in *Texas Monthly*, *Cosmopolitan*, *GQ*, *Playboy*, *Elle*, and *Mademoiselle*.



**THANKS TO A
BRAND NEW
TECHNOLOGY CALLED
CROMACLEAR,**



**OUR COMPETITORS
CAN SEE THEIR
DARK, DISMAL FUTURES
IN GREATER DETAIL
AND WITH
UNPRECEDENTED CLARITY.**



**The New MultiSync® M Series Monitors
With Revolutionary CROMACLEAR™ CRT Technology.**

Behold the brightness. The clarity. The look of panic in our competitors' eyes. Introducing the MultiSync M Series monitors from NEC — think of them less as new monitors, more as the standard by which all others will be judged.

The MultiSync M500™ and M700™ monitors are the first to incorporate CROMACLEAR, NEC's patented new CRT technology. Similar in design to that found in today's televisions, CROMACLEAR lets you view text, graphics and video with enhanced focus, greater color saturation, better contrast and increased depth and dimension. Simply put, you'll enjoy the brightest, sharpest, clearest images in the industry — just what you've come to expect from NEC.

What's more, our Video Boost feature automatically sets the monitor screen to the optimal contrast and brightness level for viewing TV and video images.

Built-in speakers allow you to customize sound for movie, music, games and voice applications. There's even a built-in microphone.

Then, of course, there's the issue of our famed reliability. Which really isn't an issue at all since both monitors are backed by a 3-year limited warranty, one of the best in the industry. Perhaps of even more importance is the fact that each is backed by NEC's hard-earned reputation for building,

without question, the most precise monitors in the world.

The MultiSync M Series monitors from NEC. Thanks to us, the only thing that appears dim is the future of our competitors. On second thought, what competitors?

*MULTISYNC M500
15" CROMACLEAR Technology CRT
(13.8" viewable image size)*

*Supports resolutions from
640 x 480 to 1024 x 768*

*MULTISYNC M700
17" CROMACLEAR Technology CRT
(15.6" viewable image size)*

*Supports resolutions from
640 x 480 to 1152 x 870*

*Supports refresh rates
from 55 to 120Hz*

Built-in speakers and microphone

OptiClear™ screen surface

On-Screen Manager Controls

3-year limited warranty

To learn more about either the MultiSync M500 or M700 monitors, call 1-800-NEC-INFO. To have the information sent to you by fax, simply call 1-800-366-0476 and request document #157201.

SEE, HEAR AND FEEL THE DIFFERENCE.™

NEC

Visit our new web site at <http://www.nec.com>

MultiSync is a registered trademark and CROMACLEAR, OptiClear, M500, M700 and See, Hear and Feel the Difference are trademarks of NEC Technologies, Inc. All other trademarks or registered trademarks are property of their respective owners. GSA #GS00K94AG5241PS01. ©1996 NEC Technologies, Inc. Key #14326.

Circle 16 on reader service card



The revolution continues.

Seven years ago Kensington started a revolution by introducing Turbo Mouse, the first high-performance trackball for Macintosh. Since then, Turbo Mouse has won more awards than any Macintosh input device in history. Now, the revolution continues with the all-new four-button Turbo Mouse 5.0. For more information, call 800-535-4242.

PC Mac Connection

1-800-986-2259 1-800-222-2808



KENSINGTON

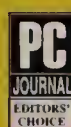


1-800-258-2088
Source code: KE01

MacWAREHOUSE

1-800-255-6227

Turbo Mouse 5.0



Turbo Mouse and Kensington are registered trademarks of Kensington Microware Limited. All other trademarks are the property of their respective owners. © 1995 Kensington Microware Limited 12/95

Circle 1 on reader service card